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PROMOTING HEALTH AND WELL-
BEING IN LATER LIFE: RETIREMENT
AS A TRANSITION POINT

A FADEEVA

PhD

2020

**PROMOTING HEALTH AND WELL-
BEING IN LATER LIFE:
RETIREMENT AS A TRANSITION
POINT**

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of the requirements of the
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Abstract

There is a growing demand for sustainable interventions to promote health and well-being in later life. One way to support older adults is to intervene during the retirement transition when individuals experience increased free time and a heightened need to develop new lifestyles (Moffatt & Heaven, 2017). However, to understand how retirement transition can serve as a ‘gateway’ for health interventions, exploring the mechanisms behind psychological adjustment to retirement is needed.

It is posited that one approach to understanding retirement adjustment is to apply self-determination theory (SDT; Deci & Ryan, 1985, 2000). According to SDT, changes in well-being are predicted by satisfaction or frustration of basic needs for autonomy, competence, and relatedness. This PhD aimed to examine if SDT showed utility in understanding the complex process of retirement adjustment and to develop an intervention for supporting health and well-being in retirement.

Four empirical studies used a combination of qualitative and quantitative methods to address the research aims. The first longitudinal study tracked changes in well-being and other psychological factors including need satisfaction/frustration over retirement transition. A vignette study examined the effects of personality on the perception and behaviour responses to need supportive and thwarting events in retirement. A qualitative study further explored the role of individual and contextual contributors to retirement adjustment. The final study followed the Intervention Mapping approach (IM; Bartholomew et al., 2006) to design a retirement lifestyle planning initiative.

Results suggest that SDT can be used to understand retirement adjustment by 1) evidencing the link between need satisfaction and well-being in the target group; 2) suggesting an SDT-informed mechanism behind the effects of personality on retirement experiences; 3) explaining the role of psychological contributors (identity, social interaction, independence) and contextual factors in retirement adjustment through need satisfaction/frustration. The findings informed the development of a new ‘Backcasting’ intervention.

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Declaration

I declare that the work contained in this thesis has not been submitted for any other award and that it is all my own work. I also confirm that this work fully acknowledges opinions, ideas and contributions from the work of others.

Any ethical clearance for the research presented in this thesis has been approved.

Approval has been sought and granted by the Faculty Ethics Committee on 03/05/2018.

I declare that the Word Count of this Thesis is 59,507.

Chapter 1

General Introduction

There has been substantial growth in the number and proportion of older people over the age of sixty-five in all countries over the world (United Nations [UN], 2019) attributable to an increased life expectancy (World Health Organisation [WHO], 2011). However, increased longevity is accompanied by an increase in illness and disability (Office for National Statistics [ONS], 2018) which can be associated with: an inability for people to continue working, decreased quality of life, difficulties completing activities of daily living, and reduced capacities to benefit the society and families (Government Office for Science, 2016; Netuveli, Wiggins, Hildon, Montgomery, & Blane, 2006). Therefore, enabling a greater proportion of older people to stay healthy and active has become one of the key priorities for the health and social policies globally (WHO, 2012) and in the UK (Department of Health & Social Care, 2018).

Both research (e.g., Lionis & Midlöv, 2017) and policies (e.g., Public Health England [PHE], 2019) advocate for the use of a preventative approach to facilitate healthy ageing. Healthy ageing involves improved health and well-being, increased independence, social connectedness and support, and life enjoyment in later life (PHE, 2019). A preventative approach to health promotion aims to engage individuals and communities to select healthy behaviours that reduce the risk of developing chronic diseases and other morbidities (Naidoo, Wills, & Sc, 2000), which helps to decrease the burden on healthcare systems, prevent early mortality, and improve quality of life in the target population (Edelman, Mandle, & Kudzma, 2017). A promising approach to

prevent age-related decline is to implement health initiatives during retirement transition, when people come into older age, develop new routines, and some even consider changing their unhealthy habits (Heaven et al., 2015). Retirement adjustment is associated with complex changes in people's identities, social circles, activities (Wang, 2007), and it is necessary to better understand how different psychological and lifestyle factors are linked to more positive retirement experiences in order to promote healthy habits (Zantinge, van den Berg, Smit, & Picavet, 2014). As such, the purpose of this PhD is to improve our understanding on what contributes to retirement adjustment and how to use retirement transition in order to promote health and well-being.

1.1 When Does Older Age and Retirement Begin?

The focus of this PhD is on retirement and the ageing population, so first it is important to discuss how 'older age' and 'retirement age' are defined in the literature and in this thesis.

At the biological level, ageing is defined as a decrease in mental and physical capacities and a growing risk of disease (Navaratnarajah & Jackson, 2013). However, ageing is not a uniform process across populations due to various factors including lifestyle, genetics, and overall health (Levine, 2013). As a result, the classification of 'older age' can vary significantly between individuals with chronological time alone not appropriate to define age, as such, it is difficult to set universal classifications for older age (WHO, 2001).

The UN and WHO have used the cut-off of 60+ to refer to the older population. However, the threshold of old age varies in different parts of the world. For example, for African countries, the WHO set the age 50+, whereas western countries, including the UK, arbitrarily define old age as above 65 (Kowal & Dowd, 2001). Some authors have

even subdivided older age further as young old (65-74), old (75-84), and old-old (85+; e.g., Koo, Kölves, & De Leo Volkert, 2017; Kreuel, Hesecker, & Stehle, 2004).

The definition of ‘elderly’ or ‘older age’ is often referred to the age at which an individual can begin to receive pension benefits (Kowal & Dowd, 2001), but there is no consistent threshold, even across one country. Currently in the UK, state pension age is sixty-six for both men and women (Department for Work and Pensions [DWP], 2020). Pension age has increased over time, the last change from sixty-five to sixty-six was introduced in December 2018, and by 2028 the UK state pension age will likely reach sixty-seven (Age UK, 2019). Moreover, there are other types of pension in addition to state pension, for example workplace and personal pensions can be available at an earlier age, allowing some people to retire earlier. Importantly, the default retirement age (a forced retirement age of 65) in the UK was abolished, which means people can work as long as they want or need to (DWP, 2020). In addition, the way in which people define retirement can differ, for example some associate retirement with the time when they start receiving pension benefits, whereas for others retirement is related to the exit from their employment (Cahill, Giandrea, & Quinn, 2015).

As such, although there is no general agreement on the age at which people become ‘old’ or should retire, in this thesis, ‘older age’ will refer to individuals who are sixty-five and above as this threshold is more commonly used in the UK and the Western literature. For the WHO and UN documents cited in the thesis, ‘older age’ refers to individuals aged sixty and above, unless otherwise is specified. No specific age is used in relation to retirement, and the beginning of retirement is based on the time when individuals start to receive pension or/and withdraw from their employment.

1.2 Ageing Population

Due to the increased life expectancy and a decline in birth rates in more recent years, an ageing population is posited to become one of the most significant societal transformations of the twenty-first century (UN Population Fund, 2012). In 2017, globally there were 962 million older adults (60 or older), more than doubled from 1980 when there were 382 million older adults worldwide (UN, 2017). In the UK, the average age exceeded 40 in 2014, and by 2040 nearly one in seven people is predicted to be aged over 75 (Government Office for Science, 2016).

The ageing society and changing structure of the population will have significant implications for the economy, public services and society at the global, national, and local levels (Bloom, Canning, & Fink, 2010; Harper, 2014). The ageing population can present positive impacts on both society and individuals, for example, through increased involvement of older adults in volunteering and community activism (e.g., Barners, 2005; Pillemer et al., 2016), longer working lives (DWP, 2017), emergence of a new market (Arensberg, 2018), and providing help and care for family members (Parker, Horowitz, & Roha, 2015). However, the increased proportion of older people also creates numerous challenges.

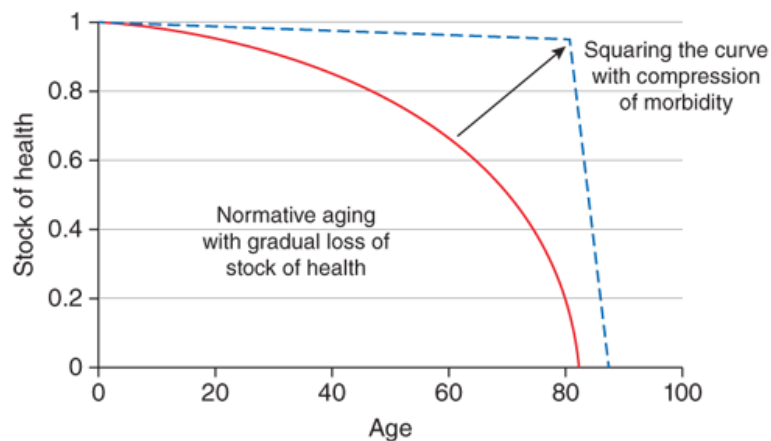
One notable challenge associated with an ageing population is the increased financial pressure on the government and society (ONS, 2018), for example, through increased government spend on health care and pensions, shortage of workers, or decreased capital investment due to higher savings for pensions (Nagarajan, Teixeira, & Silva, 2016; Marešová, Mohelská, & Kuča, 2015). The negative consequences would considerably affect older adults themselves, especially those approaching retirement. An ageing society results in a growing number of retired people who become increasingly

dependent on a declining working population. This might lead to increased mass poverty in older age, which will have adverse effects on health, lifestyle, and subsequently increase burden on healthcare services (UN, 2011).

A significant contributor to the challenges presented by an ageing population is the discrepancy between life expectancy and healthy life expectancy. Healthy life expectancy has also increased but not at the same rate as life expectancy, which means more people are living in poor health for longer, with multiple long-term conditions, and more people are developing dementia (ONS, 2018). Therefore, one of the important ways to prevent the negative consequences associated with the ageing population is to delay the onset of ageing manifestations and chronic diseases as much as possible and facilitate healthy ageing (Figure 1.1).

Figure 1.1

Loss of health with ageing



Note. Compression of morbidity. Reprinted from *Harrison's principles of internal medicine*, by J. L. Jameson et al., 2018. McGraw-Hill. Copyright 2018 by McGraw-Hill Education.

Figure 1.1 demonstrates two trajectories: one represents normative aging with gradual loss of the full ‘stock of health’ (health capital or health resources; Grossman, 2017), with which individuals are born, and indicates gain of morbidity (indicated by the red line). The second trajectory, a squared curve (represented by the blue line), illustrates greater longevity and fuller stock of health (less morbidity) until shortly before death. In other words, individuals enjoy fuller health and better quality of life for longer, both considered to be ideal for most people and represents the target for many public health bodies, researcher, and healthcare professionals (Fries, 2005).

The most recent WHO Global Strategy and Action Plan on Ageing and Health (GSAP, 2015) outlines the global framework for 2016-2020. One of the key objectives includes commitment to action on healthy ageing in every country. Healthy ageing is defined as the “ability of people of all ages to live a healthy, safe and socially inclusive lifestyle” (Age UK, 2015). As most of the health problems in older age are linked to chronic conditions, particularly non-communicable diseases, the priority should be on preventing or delaying the common non-communicable diseases by enabling healthy behaviours and providing supportive environments. The document also highlighted a number of significant gaps in our understanding of the factors that can foster healthy ageing. Building the evidence on ageing process, roles and needs of older people is crucial for informing interventions that facilitate healthy ageing (WHO, 2017).

The UK government policies have repeated commitments to achieving the goal of healthy ageing. The National Service Framework (NSF) for Older People set an aim of increasing the healthy life expectancy of older individuals (Department of Health, 2001). To achieve this aim, the policy focuses on prevention, linking this to the need for greater efficiency and productivity (Department of Health & Social Care, 2018). The strategy that aims to prevent or delay frailty and disability in older people includes

behaviour change and health promotion activities with the strongest emphasis on physical activity and nutrition (Department of Health, 2001). One of the key features of the preventive measures is that they should not just focus on providing good information and services, but rather persuade people to adapt or change their behaviours to achieve healthy ageing (Age UK, 2010).

Importantly, in accordance with the recommendations, in order to promote health and well-being in older adults, it is crucial to explore the perspectives of the target population itself (WHO, 2017). Before deciding on the actions and developing behaviour change interventions, the first step is profiling the population, understanding their needs, motives, preferences and potential barriers (Hardcastle & Hagger, 2016). Profiling the population may help to overcome one of the challenges of health promotion - knowing when and how to intervene in order to produce a desired outcome (Laverack, 2017).

This thesis has specifically attempted to profile the retired population, as retirement is one of the most important milestones in later life with numerous effects on health, well-being, and quality of life (Wang, 2007; Wang & Shi, 2014). For many people retirement is viewed as the beginning of older age, when their identity and lifestyle transform (Waters, Briscoe, Hall & Wang, 2014). In addition, as retirement transition is associated with changes in day-to-day activities, routines and identities, it can be a good time to intervene in an attempt to promote healthy behaviours (Baxter et al., 2016).

To understand how older adults can be supported after retirement, it is necessary to examine the potential impact of retirement upon health and well-being. The field of gerontology has attempted to understand the ageing process and retirement. The next section provides an overview of prominent ageing and retirement theories, identifying

how these theories contribute to our understanding of older age and retirement process, their strengths and limitations.

1.3 Overview of Retirement Theories

Despite the importance of adaptive retirement to older adults, their families, and the larger society, evidence on retirement process is ambivalent (Wang & Shultz, 2010), and so there is still a need for a more comprehensive and clear understanding of retirement processes and factors associated with a greater retirement adjustment. Over time, different theoretical approaches have been applied to investigate retirement adjustment. Historically, theoretical models of retirement and ageing have been divided into four groups: biological, psychological, psychosocial and economic (Lange & Grossman, 2010; Wang, 2011). Given the focus of the current research is on the understanding of retirement process and improving retirees' well-being, the most widely used and cited psychosocial and psychological theories on retirement and ageing will be discussed further in more details.

1.3.1 Disengagement Theory

One of first theories of aging with a specific focus on older adults was disengagement theory (Cumming, Dean, Newell, & McCaffrey, 1960; Cumming & Henry, 1961). Central to disengagement theory is the gradual disengagement from society and relationships, specifically disengagement theory is concerned with the decline in the type of relationships and involvement in central roles with age (e.g., work roles; Lytle, Foley, & Cotter, 2015). As a result of the separation from former roles, older adults free themselves from social responsibilities and have more time for internal reflection, whereas the transition of responsibilities to young people provides continuously functioning society. Ideally, this social equilibrium is desirable and satisfying for both

older adults and society (Lange & Grossman, 2010). According to disengagement theory, retirement transition is characterised by participating in fewer life domains (e.g., work-related goals, communication) and changing in interaction styles, as older adults (especially retirees) might be less focused on seeking social approval, but instead more focused on family relationships (Lytle, Foley, & Cotter, 2015).

However, disengagement theory has three important shortcomings. First is the assumption that retirement is always associated with social withdrawal (Crawford, 1971; Lytle et al., 2015). However, many retirees often continue or even increase engagement with their families, friends, and communities, and some take new social responsibilities such as volunteering (Van den Bogaard, Henkens, & Kalmijn, 2012). The second limitation is that retirement and ageing are often viewed in a negative way, specifically as the life period when individuals lose control over their own lives and become more vulnerable. For some, retirement can provide an increased freedom (Weiss, 2005), and an opportunity to spend more time on activities of their own choice, for example hobbies, travelling, or education, which can help them regain control over their lives (Hunter, Wang, & Worsley, 2007). Finally, disengagement theory focus is solely on social withdrawal and disengagement, without considering the effects of many sociocultural variables and environmental opportunities.

As such, disengagement theory has historical significance in gerontology as the first theory developed by social scientists (Achenbaum, 1995). However, the theory now has limited practical applications for informing interventions to support well-being and health, largely due to seeing ageing process in a pessimistic light as a time of natural decline.

1.3.2 Activity Theory

Activity theory, first introduced by Havinghurst and colleagues (Cavan, Burgess, Havinghurst, & Goldhamer, 1949; Havinghurst & Albrecht, 1953), and more recently developed by Lemon, Bengtson, and Peterson (1972), arose as a response to the disengagement theory (Bengtson, Gans, Putney, & Silverstein, 2009) and posits that older adults should remain active, and that loss of roles in older age negatively affects life satisfaction (Lytle et al., 2015). Activity theorists acknowledge that some decrease in activity level might happen with age, however the most successful and satisfied older adults are those who maintain the highest possible degree of engagement with activities, in particular physical activity (Havighurst, 1963; Schwartz & Peterson, 1979).

The fundamental principles of activity theory have been supported by existing research (e.g., Harlow & Cantor, 1996; Longino & Kart, 1982; Schroots, 1996), however, activity theory also has several limitations. First, it is argued that the ability of the older adults to maintain their level of activity is overestimated, some older people simply cannot continue the same lifestyle due to health decline, thus having to terminate or adapt to some leisure activities (Yashin, 2007; Van der Meer, 2008). Also, older adults might still feel satisfied even if their overall activity level decreases, when they engage with meaningful activities (e.g., spending more time with families) and engage less with unimportant tasks (Pushkar et al., 2010). In addition, activity theory takes on a very individualistic approach and does not consider barriers to successful ageing that many societies present such as socioeconomic (e.g., financial situation; Elliott, 2016) or cultural conditions (e.g., attitudes towards physical activity; Bhatnagar, Shaw, & Foster, 2015). The acceptance of activity theory has diminished in recent years, however it is still utilised as a standard to compare observed activity levels and life satisfaction in the ageing population (Schulz, 2006).

1.3.3 Continuity Theory

Continuity theory (Rosow, 1963) was first developed as a general theory of ageing aiming to explain human development over the life course. The main focus of the theory was on explaining how individuals adapt to middle- and older-age by maintaining their existing internal and external structures, for example using familiar coping mechanisms in the response to challenging situations, interacting with the same inner circle of close family and friends across lifetime (Atchley, 1989). Continuity theory argues that there should not be a significant decrease in retirees' well-being, unless facing severe difficulties in maintaining their general lifestyle patterns. The total number of activities after retirement can decrease but maintaining a consistent level of participation in the most valued and meaningful activities should help to ensure a smooth transition to retirement (Atchley, 1971). Unlike disengagement theory, which describes retirement as an abrupt transition, continuity theory emphasises the disadvantages of complete withdrawal from work without having other interests or life aspirations. As such, continuity theory views retirement as a stage of life and recognises the impact of work, other interests, and life satisfaction on well-being during retirement (Lytle et al., 2015).

A strength of continuity theory is that it acknowledges individual differences in responses to retirement. Some people respond to retirement more positively, for example they are better in maintaining close relationships with significant others, whereas others experience more maladaptive outcomes due to inability to identify and utilise resources they already have to adapt to changes. Continuity theory has relevance to clinical practice and social care, for example nurses and carers can provide individualised, appropriate care to elders by applying more holistic approach that incorporates life experiences of people (Onega & Tripp-Reimer, 1997). Furthermore, similar to activity theory,

continuity theory provides a conceptual framework for examining the impact of activities participation on well-being (Winstead, Yost, Cotten, Berkowsky, R. & Anderson, 2014).

However, continuity theory has received critical feedback for not considering the impacts of environmental factors on individuals such as ethnic and cultural differences (Lytle, Foley, & Cotter, 2015), and socioeconomic and demographic characteristics (Birren & Schroots, 2001). In addition, continuity theory does not address the influence of biological factors, in particular health status, which can significantly affect older adults and their lifestyles (Steptoe, Deaton, & Stone, 2015).

1.3.4 Role Theory

Role theory (Phillips, 1957) proposes that social expectations determine the roles people have in life, which in turn affect an individuals' self-image and shapes their behaviours (Lytle et al., 2015; Van der Horst, 2016). According to role theory, individuals move from one role to another over their life course.

George (1993) suggested that a life transition, such as retirement, can be explained by role theory, as retirement is associated with role exit and entrance. This might include the processes of losing or weakening work roles including the worker role or the career role and strengthening the family member role or the community member (Barnes-Farrell, 2003). The work role can have a significant impact on one's identity and self-image. For people with a stronger work centrality, role loss caused by retirement might lead to a decrease in well-being, anxiety, or even depression (Bruke, 1991; Wang, 2007). Conversely, those individuals who gave less importance to their work role are more likely to view retirement in a positive way (Adams, Prescher, Beehr, & Lepisto, 2002). Additionally, for individuals who would like to engage in the roles of a family member or community member, retirement provides an opportunity to switch to those

roles (Wang, 2007). In line with the role theory, volunteering, bridge employment, and other initiatives that support identity acquisition or continuation after retirement, can have beneficial effects on well-being (Matthews & Nazroo, 2020).

Despite research supporting the fundamental tenants of role theory, some limitations have been highlighted. First, role theory does not acknowledge the possibility of deviance from a pre-defined role in particular social environment. People might choose a behaviour, which is not in line with the roles that society prescribes them, and this different role can have a positive effect on their wellness (Biddle, 1986). For example, older adults can decide to learn new skills or take up new employment even if societal norms would expect them to retire instead. Furthermore, roles expected to be played in different social settings tend to change over time. With regards to ageing and retirement, nowadays, social perceptions have moved away from the narratives of decline and social withdrawal associated with ageing (Cook, 2018). An increasing number of retired individuals engage with a bridge employment, volunteering, or choose to return to work after retirement (Beehr & Bennett, 2015; Wang 2007). However, role theory does not consider all the variety of activities and pathways in retirement and their potential to have a positive impact on well-being of different individuals.

1.3.5 Stage Theory

Stage theory (Atchley, 1976) describes retirement adjustment as a long-term process during which an individual moves through a series of stringent stages and may experience variations in well-being. The first stage is a '*honeymoon*' stage when new retirees may feel more energetic and satisfied as they experience freedom of time and space, start new activities and roles, and increase in well-being. As time passes, retirees may experience a *dissemination* stage when they realise, they had unrealistic

expectations due to lack of resources to implement all their plans. During the dissemination stage well-being might drop. The next stage is a *reorientation* stage during which retirees reassess their life positions, accept limitations, focus on further adjustment to retirement, and well-being starts improving again. Retirees experience a *stability* stage when they have adjusted to retirement and have settled into a daily life routine. Finally, *termination* stage occurs when people lose independence due to illness and disability (Reitzes & Mutran, 2004; Wang, Henkens, & Van Solinge, 2011).

Stage theory is intended to be used as a framework to better understand the emotions that occur during retirement (Flowers, 2010). Although using stages is a popular way of explaining life transitions, this approach has not received substantial support from empirical studies of retirement adjustment (Van Solinge, 2013). A strength of role theory is its attempt to predict and understand the dynamic nature of retirement adjustment, however the pattern suggested by stage theory is quite rigid, identifying a single retirement scenario for most people, but it may not be applicable to everyone and every retirement system (Reitzes & Mutran, 2004). Additionally, the specific time scale for each stage is not clear but neither the mechanism predicting the transition from one stage to another (Wang, Henkens, & Van Solinge, 2011).

1.3.6 Selective Optimisation with Compensation Theory

Selective optimisation with compensation theory (SOC; Baltes, 1987) focuses on successful ageing and understanding of developmental change and resilience across the life span (Freund & Baltes, 1998). The theory is based on the assumption that people face gains (e.g., education, social, coping skills) and limitations in resources (e.g., illnesses or functional decline) through their life span. Individuals can adapt to life changes, for example caused by ageing or retirement, using three components: selection,

optimisation, and compensation. The process of *selection* occurs because human resources, such as time and energy, are limited as such not all goals can be followed; people have to choose which opportunities they want to pursue. *Optimisation* involves the allocation and refinement of internal or external resources in order to achieve higher levels of functioning in selected goals. Finally, *compensation* occurs due to loss of resources or the decline of goal-relevant means when substitutional processes are needed to sustain a given level of functioning in the targeted domain (Freund & Baltes, 1998).

Even though SOC is conceptualised as a general life span developmental model, the theory processes are particularly relevant for older adults as they are more likely to experience health-related problem, limitations of resources, and associated compensatory needs (Freund & Baltes, 1998). Ageing individuals have to choose new activities and roles due to existing limitations (selection and compensation) and at the same time select the most satisfying activities and roles (optimisation; Lange & Grossman, 2010). It was demonstrated that the strategies of selection, optimisation, and compensation were associated with the subjective indicators of successful ageing such as satisfaction with ageing, lack of agitation, positive emotions, and absence of social and emotional loneliness (Freund & Baltes, 1998). Therefore, ideally selective optimisation with compensation should be a positive coping process. Selective optimisation and compensation theory has been particularly relevant in occupational settings and can make an important contribution to successful ageing at work (Müller et al., 2018).

However, SOC has its limitations as the theory does not account for various scenarios, particularly when the use of adaptive coping mechanisms become more challenging. It might become increasingly difficult to use selection, optimisation, and compensation in older age due to age-related losses in resources. Persisting with

optimisation and compensation might require so many resources that other important activities can become impossible to carry out (Freund & Baltes, 1998), which results in disengagement from an individual's goals.

1.3.7 Life Course Prospective Theory

According to life course prospective theory (Elder, 1995; Elder & Johnson, 2003) people's plans, choices and actions are influenced by their personal experience, values and goals within the settings provided by their social world (Wang, Henkens, & Van Solinge, 2011). Thus, life course prospective theory encompasses the aspects addressed in psychological theories such as tasks associated with different stages of personal development and the social aspects of relationships between individual and society (Lange & Grossman, 2010). The theory views retirement as a process that incorporates both the retirement transition and the postretirement trajectory. According to life course prospective theory, experience in one life sphere, such as retirement, affects and is affected by experiences in other life spheres. As such, non-work spheres are important for retirement as they provide alternative identities and opportunities for engagement during post-retirement life.

Life course prospective theory has several advantages over traditional psychological theories of human development as it considers historical and social changes of human behaviour, which is particularly important in a rapidly changing society (Hutchison, 2010). This theory refers to a multidisciplinary paradigm for the study of people's lives, organisational contexts, and social changes and discusses that biological (e.g., age, health), psychological (e.g., motivation, emotions, behaviours), and social factors (e.g., communities, institutes) can shape people's experiences, perspectives, and decisions associated with retirement adjustment (Gettings & Anderson,

2018). Recent studies adapting the life-course perspective have emphasised the importance of the individual context of the retirement transition, as well as the interplay of different life spheres (Henning, Lindwall, & Johansson, 2016). Additionally, the theory provides an opportunity for preventive interventions (Kellam & Van Horn, 1997).

Nevertheless, life course perspective theory has some weaknesses. First, like other behavioural science perspectives, it looks for patterns of human behaviour instead of identifying the mechanisms by which those patterns can be explained (Hutchison, 2010). Next, as the theory was primarily developed and tested in developed industrial countries, it might not be universally applicable to other countries and cultures. Finally, the theory fails to explain *how* the micro world of individual and family lives connected to the macro world of social institutions and formal organisations (Dannefer, 2003; George, 1993). There were attempts to link those two worlds together, for example exploring the effects of job characteristics and environments on individuals' desire to work after retirement (De Wind, van der Pas, Blatter, & van der Beek, 2016). However, explaining the relationships between organisational characteristics and individual/family factors has still remained a challenge (Hutchison, 2010).

1.3.8 Resource Perspective Theory

According to the resource perspective theory (Wang, 2007; Wang et al., 2011), ease of adjustment to retirement is directly influenced by the individual's access to resources. In this context of the theory, resources mean the total capability an individual has to satisfy their needs and achieve personal goals (Hobfoll, 2002). The resources may include physical abilities, cognitive, motivational, social, emotional, and financial resources (Wang, Henkens, & Van Solinge, 2011). The resource perspective theorists describe three possible patterns for well-being: 1) maintaining pattern, if the total amount of the

resources does not change significantly after retirement; 2) negative changes if resources decline (e.g., financial decrease or losing social connections with former colleagues); 3) an improvement in well-being if retirees acquire additional resources (e.g., making new friends or learning new skill). Each retiree has their own trajectory of retirement adjustment which is determined by changes in the total amount of resources they possess (Yeung & Zhou, 2017).

The advantage of the theory is its applicability for multidisciplinary research. Researchers from different fields can agree on the overall research approach and apply their existing knowledge to improve the field of retirement adjustment (Wang, 2011). Furthermore, the theory can explain retirement process through a longer period of time as changes in resources are inevitable over a lifespan. It is possible to compare a retiree's resources at the beginning of the retirement adjustment with resources at different time points in order to assess or predict how change in resources would affect a retiree's well-being (Wang & Alterman, 2017). Resources perspective framework has received an increasing support in retirement literature as it considers various resources that can affect retirement experiences and account for individual differences in retirement adjustment journeys (Barbosa, Monteiro, & Murta, 2016).

Nevertheless, this approach has its limitations. Many resources can be measured both objectively (e.g., income, health indicators) and subjectively through individuals' personal perceptions and views (e.g., satisfaction with finances and health), and there is an unanswered question whether objective or subjective measures are more important (Hansson, Buratti, & Johansson, 2019). Subjective measures of resources may be less accurate in accounting for changes in the transition period than objective measures, however perceived access to resources can be more relevant to retirement adjustment than its objective measures. For example, financial satisfaction might be a stronger

predictor of well-being than the quantity of financial assets. This makes predicting the roles of different resources in retirement adjustment more challenging. Furthermore, there is no hierarchy of resources in the model, and so it is unclear which losses or gains in resources are more relevant and how different resources can interact. Finally, the recourse perspective approach does not account for people's abilities to adapt to the lack in certain resources and use other available resources instead (Hobfoll, 2002).

1.3.9 Well-Being across the Retirement Theories

Whilst the theories described above vary in their primary focus of retirement experience (e.g., changing roles, loss of previous activity, engagement in new activities), a commonality in their theorising is well-being after retirement.

Psychological well-being

Well-being is a comprehensive notion, which incorporates multiple aspects including psychological, physical, social, and economic (White, 2008). In the psychological community, debates surrounding the definition of well-being and its components are ongoing (Dodge, Daly, Huyton, & Sanders, 2012). For example, according to Ryff (1989), the core dimensions of psychological well-being include self-acceptance, purpose in life, environmental mastery, positive relationships, personal growth, and autonomy. Literature has also described other dimensions of well-being such as ability to fulfil goals (Foresight Mental Capital and Wellbeing Project, 2008), life satisfaction (Diener & Suh, 1997; Seligman, 2002), and happiness (Pollard & Lee, 2003).

More recent research has related well-being to the concepts of optimal functioning or flourishing, which incorporates both hedonic (positive emotions, happiness) but also eudaimonic (personal development, positive relationships, contribution to the society) aspects of well-being (Duckworth, Steen, & Seligman, 2005;

Linley, Joseph, Harrington, & Wood, 2006; Shah & Marks, 2004). Despite that flourishing refers to the presence of high levels of positive functioning mainly in the mental health domain (inclusive of social health), there has been significant attention to the role of physical health domain. While public health researchers and professionals have viewed physical health as one of the key domains of well-being (World Health Organization, 1997), positive psychologists have increasingly recognised that health and health behaviours are important factors that enable optimal functioning (Prendergast, Schofield, & Mackay, 2015), for example in terms of achieving goals and staying connected with the society.

Importantly, supporters of flourishing highlight the dynamic nature of well-being (Seligman, 2011). The dynamic nature of well-being, specifically how well-being fluctuates in response to the interaction between various environmental and individual factors, became the basis for more recent definitions of well-being. In particular, Dodge, Daly, Huyton, and Sandersas (2012) view well-being as the balance point between an individual's resources (e.g., psychological, social, and physical) and life challenges. To maintain or increase their well-being, individuals should experience challenging life events but be able to solve them with resources they have. Contrarily, imbalance between the amount of resources and challenges (e.g., lack of resources to solve the problem or lack of challenges for personal development) would lead to decreased well-being. This balance fluctuates over time, which results in well-being changes.

Well-being trajectories in retirement

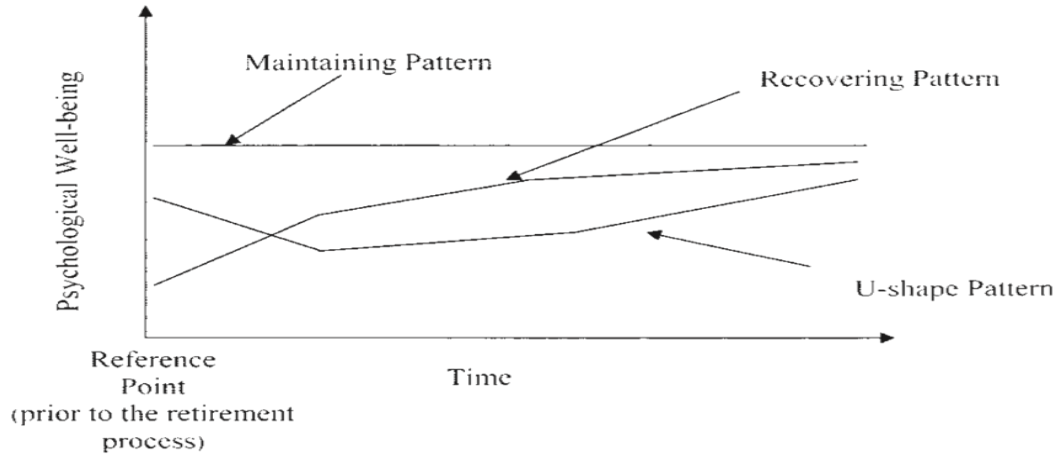
With regards to the retired population, changes in well-being have been often used as an indicator of adjustment to retirement (e.g., Gall, Evans, & Howard, 1997; Wang, 2007). Existing evidence suggests three main trajectories for changes in well-being in

retirement: recovering, maintaining, and U-trajectory (Figure 1.2; Wang, 2007). Recovering pattern is described within role theory (Phillips, 1957). For those, who do not like their employment, retirement may provide an opportunity to escape from unpleasant roles and as a result experience an increase in well-being (Adams, Prescher, Beehr, & Lepisto, 2002). By contrast, for retirees who did enjoy their employment, especially if job roles were central to their identities, psychological well-being might drop after retirement (Burke, 1991). Continuity theory (Atchley, 1971) suggests that those individuals, who are able to maintain their habits, activities, and lifestyle as they retire, should not experience any significant changes in their well-being. For those retirees, who cannot accommodate retirement within their lifestyles and identities, their well-being is more likely to drop.

A U-shape trajectory is more aligned with the life course perspective approach (Levinson, 1986; Levinson & Levinson, 1996; Super, 1980) and stage theory (Atchley, 1976). Some retirees might experience negative changes in well-being during the retirement transition as they adjust to a new life. However, those changes are temporal, and after the adjustment stage, individuals enjoy retirement more and more. Initial negative changes might be caused by unrealistic expectations of retirement or decrease in resources but as time goes by individuals accept the limitations and develop their own approaches to retirement adjustment. Similarly, the first four phases (honeymoon, dissemination, reorientation, stability) of retirement adjustment described within the stage theory seem to follow U-shape pattern.

Figure 1.2

Trajectories of retirement adjustment



Note. An illustration of different psychological well-being change patterns during the retirement transition and adjustment process. Reprinted from “Profiling retirees in the retirement transition and adjustment process: Examining the longitudinal change patterns of retirees’ psychological well-being”, by M. Wang, (2007). *Journal of Applied Psychology*, 92. Copyright 2007 by the American Psychological Association.

Overall, most of the retirement theories suggest quite defined patterns for well-being in retirement. The only exception is the resources perspective framework (Wang, 2011), which views retirement adjustment as a more flexible dynamic process, and well-being is subject to change due to the fluctuations in availability of the resources.

1.3.10 Limitations of the retirement theories

The arguments regarding each of the described retirement and ageing theories mostly concern the extent to which they can fully address and explain the experiences of people after they retire or when they get older. One of the main requirements for the theories is that they need to be inclusive but comprehensive enough to explain the diverse

developments of later life. A comprehensive theory needs to clearly indicate the key phenomena being investigated, how the elements of this phenomena are related to each other, and ideas on what methods and methodologies can potentially be used for investigating the phenomena (Gieseler, Loschelder, & Friese, 2019; Reed, Stanley, & Clarke, 2004). In order to be able to inform practice and policies, a theory needs to have clear connections with the discussions around the support that older people might want and need, explain how those needs can be determined and met, and how to shape the services to address those needs. By matching those criteria, a theory would be able to have ecological validity and potential to positively impact older adults' lives (Reed et al., 2004).

With regards to the described criteria, a common limitation of the existing retirement theories is that many of them do not explain mechanisms underlying human behaviours but rather describe factors that affect quality of retirement (e.g., activities, accessible resources) and/or behavioural outcomes (e.g., disengagement from the society, engagement with new activities and roles). Most theories have only been tested in the economically developed countries. However, due to the diversity of behaviours in different societies and cultures, most of the retirement theories are not universally applicable. Furthermore, a lack of ability to explain the mechanisms determining one's behaviour hinders developing and improving new interventions and appropriate change methods to address those behaviours (Bluthmann, Bartholomew, Murphy, & Vernon, 2017; Darnton, 2008; Patrick & Williams, 2012).

The retirement theories reviewed in this thesis are relatively narrow in their focus, for example describing a very defined stage of retirement (e.g., the 'honeymoon' stage at the beginning of retirement, stage theory), or in terms of the retirement pathways, as such failing to consider diversity in individual experiences (e.g., assuming that engaging

with multiple activities and roles is the only way for successful retirement adjustment; activity theory). Also, most social theories of ageing are based on linear models (i.e., only consider the effects of few factors on retirement adjustment), which appear insufficient to capture the complex interplay between ageing individuals and their changing social systems. The resources perspective framework suggested by Wang (2011) seems to be more comprehensive and flexible in terms of considering the variety of retirement paths. However, the framework also does not provide explicit theoretical explanations for changes that accompany retirement but rather combines the range of different resources and relates them with the changes in well-being.

As such, this thesis aims to develop a more universal explanation providing underlying mechanisms for differences in retirement adjustment. The described retirement theories were dismissed, as they did not fit the aims of the thesis. Another way to understand the processes that underpin a positive retirement adjustment is to look at more universal psychological theories of human motivation, personality, and mental health.

One theory that showed promise in attempting to explain changes in well-being associated with a complex retirement process was self-determination theory (SDT; Deci & Ryan, 1985, 2000). Self-determination theory can explain how interacting with various environments affects well-being. Recent evidence also suggested that SDT can account for the effects of individual factors such as personality in the response to different contexts (Mabbe, Soenens, Vansteenkiste, & Van Leeuwen, 2016). Additionally, SDT is a theory of human motivation and explains how two main types of motivation - intrinsic and extrinsic shape people's behaviour (Deci & Ryan, 2008).

Understanding how individual and environmental determinants affect one's behaviour can be used as a basis for the development and evaluation of behavioural interventions (Hagger, Cameron, Hamilton, Hankonen, & Lintunen, 2020). This can be particularly relevant with regards to preventative approach and promoting healthy ageing that incorporate health, well-being, and lifestyles. Interventions based on behaviour change theories have demonstrated effectiveness in promoting motivation toward, and participation in, health behaviour across multiple populations and contexts (e.g., Hagger & Chatzisarantis, 2007; Teixeira, Carraca, Markland, Silva, & Ryan, 2012).

The subsequent introduction outlines the general overview of SDT before explaining how the theory can be utilised for explaining retirement process and address the limitations of the existing retirement theories.

1.4 Self-Determination Theory Review

One of the most comprehensive behaviour change theories in health psychology is self-determination theory (SDT; Deci & Ryan, 1985, 2000). Self-determination theory is a macro theory of dynamic motivation, which discusses the influence of the social environment on behaviour initiation and maintenance (Wilson et al., 2008). The theory is concerned with the importance of inherent growth tendencies and innate psychological needs for psychological health, personal development and behavioural self-regulation (Ryan & Deci, 2002).

In accordance with SDT, there are three basic psychological needs: autonomy, relatedness, and competence. The need for autonomy reflects the need to engage in activities or behaviours of one's choosing (DeCharms, 1968; Deci & Ryan, 1985). Relatedness represents feeling connected and understood by others or feeling of belonging to a given social group (Baumeister & Leary, 1995; Deci & Ryan, 1985). A

need for competence involves the need to interact effectively with the environment and to be capable of achieving goals and preventing undesired outcomes (Deci & Ryan, 1985). Basic needs are universally important for well-being in all individuals. A deficit in basic need satisfaction arouses the corresponding desires to acquire the missing experiences, although recent evidence has argued that this motivation can be moderated by individual differences (Sheldon & Gunz, 2009).

Formally, SDT consists of six mini-theories, each describing a different aspect of motivation or personality functioning. Those theories are Cognitive Evaluation Theory, Organismic Integration Theory, Causality Orientations Theory, Basic Psychological Needs Theory, Goal Contents Theory, and Relationships Motivation Theory. This thesis focuses on understanding the components of the retired individuals' well-being, how different environments contribute to it, and what makes people choose some roles and activities over the others. Therefore, three out of the six sub-theories of SDT were identified as most relevant for the purposes of the thesis: Basic Psychological Needs Theory with a particular focus on basic needs and their relevance to well-being, Cognitive Evaluation Theory that addresses intrinsic motivation for different activities and behaviours, and Organismic Integration Theory, which discusses extrinsic motivation, quality of motivation, and the motivation continuum. These three sub-theories will be discussed in more detail below.

1.4.1 Basic Psychological Needs Theory

Basic Psychological Needs Theory (BPNT; Deci & Ryan, 1985) encompasses the concept of basic psychological needs and their connections with health and well-being. In SDT, basic psychological needs specify “innate psychological nutriments that are essential for on-going psychological growth, integrity, and well-being” (Deci & Ryan, 2000, p.229). Importantly, SDTs definition of a basic psychological need has two key

elements, first, the needs are psychological, and so they concern psychological functioning of individuals rather than physiological (e.g., hunger, warmth, or shelter). Second, needs are innate, organismic necessities, which means they are inborn patterns of behaviour that are biologically determined rather than acquired learned motives.

All the needs are essential and equally important for psychological health, well-being and intrinsic motivation, in accordance with SDT (Deci & Ryan, 2000). However, SDT is not the first and the only theory that has defined and described basic psychological needs. Different psychological theories have also discussed the needs or similar concepts and their crucial roles for health and well-being.

The need for relatedness has been widely acknowledged in the literature. At first, the need for interpersonal contact was asserted by Freud (e.g., 1930), particularly through the drive for sex and the filial bond. ‘Love and belongingness needs’ were placed by Maslow’s (1968) in his hierarchy of needs as more important than needs for esteem or self-actualisation. The need to form and maintain relationships was described in Bowlby’s (1969) attachment theory. The need to belong or to feel positively and consistently connected to others has been also conceptualised as a fundamental need by Baumeister and Leary (1995). According to them, lack of attachment is linked to a range of negative effects on health, adjustment, and well-being.

Similarly, the psychology literature has investigated the need for competence, especially as a predictor of motivation and behaviour in different human endeavours (e.g., Bandura, 1997; Harter, 1981). Competence has been also linked to physical and psychological health. For example, Bandura (1997) has argued that competence and task orientation are determinants of pleasant emotional states, whereas Mechanic and Hansell (1987) demonstrated positive association between higher competence in different domains of life and self-assessed health.

With regards to autonomy, within SDT it has been emphasised that the need for autonomy is not equal to the concepts of independence but rather represents the feelings of volition and choosing behaviour in accordance with one's integrated self (Chirkov, Ryan, Kim, & Kaplan, 2003; Ryan & Lynch, 1989). The provision of choice and volition have been acknowledged to have an important role in behaviour change (e.g., Schwarzer, 2008; Vansteenkiste, Williams, & Resnicow, 2012). For example, volitional factors are assumed to predict and explain individual changes in health behaviours within health action process approach (HAPA; Schwarzer, 2008). A range of health behavioural interventions incorporates volitional approaches (e.g., Caudwell, Mullan, & Hagger, 2015). Furthermore, feeling of volition in different domains of life can have significant effects on one's health and well-being (e.g., Bouchard & Nauta, 2018).

Interacting with the social environment can support or thwart basic needs in a variety of contexts. Contexts that satisfy the basic psychological needs are associated with positive outcomes including more self-determined behaviour and well-being. In contrast, contexts that do not satisfy the needs are associated with ill-being and the pursuit of need substitutes (Deci & Ryan, 2000).

Active need thwarting and low need satisfaction

To better understand and predict the effects of different social environments on individuals' behaviour and well-being, it is important to distinguish low need satisfaction and need frustration. Psychological need frustration is conceptualised as "the perception that need satisfactions are being obstructed or actively frustrated within a given context" (Bartholomew, Ntoumanis, Ryan, & Thøgersen-Ntoumani, 2011, p. 5). By contrast, low need satisfaction may not indicate that needs are actively thwarted but suggests that an individual may not be satisfied with the degree in which needs are being met (Bartholomew et al., 2011). For example, a recently retired individual who just joined a

community club might not feel that their need for relatedness is being met enough if they do not feel connected enough to their new community friends in comparison with former work circle. On the contrary, a recently retired individual may experience active relatedness thwarting if the community club members already formed tight social groups and do not invite the retiree to their local events. Whilst low levels of need satisfaction may be associated with less excitement for certain activity or role, active need frustration is more likely to be associated with controlled motivation, amotivation, burnout or other pathological behaviours. As such, low need satisfaction and need frustration can have very different effects on individuals' motivation, behaviours, and well-being, with active need thwarting predicting more negative outcomes (Warburton, Wang, Bartholomew, Tuff, & Bishop, 2019).

1.4.2 Cognitive Evaluation Theory

Cognitive Evaluation Theory (CET; Deci & Ryan, 1985) addresses intrinsic motivation. Intrinsic motivation is associated with doing activities that the individual finds interesting and enjoyable and would do for inherent satisfaction rather than some separable consequences (Deci & Ryan, 2000). The phenomena of intrinsic motivation was first investigated in animals' behaviours, when it was discovered that different organisms engage in playful and exploratory behaviours in the absence of rewards or punishment (White, 1959).

In humans, intrinsic motivation is also an inherent, natural, and healthy type of motivation that induces people to actively learn and explore the world from birth onwards without any external incentives. This intrinsic tendency for exploration becomes crucial for cognitive, social, and physical development in childhood but also the inclination for novelty, enjoyment, creativity, assimilating the knowledge and skills

affects performance and well-being across the whole lifespan (Ryan & Deci, 2000; Ryan & La Guardia, 2000).

Interestingly, although intrinsic motivation is a natural tendency that exists within individuals, it also exists in the relationships between individuals and activities. People can be intrinsically motivated for some activities and behaviours but not for others. Furthermore, not everyone is intrinsically motivated for the same activity. Intrinsically motivated activities and environments are those that provide satisfaction of basic psychological needs for autonomy, relatedness, and competence (Ryan & Deci, 2000).

In addition, CET is concerned with the role of social factors in fostering intrinsic motivation including rewards, interpersonal controls, and ego-involvements (Deci & Ryan, 1985). For example, feedback or some rewards that strengthen feelings of competence and self-determination, enhance intrinsic motivation, whereas negative feedback or punishment might weaken competence and decrease intrinsic motivation (Deci, Cascio, & Krusell, 1985).

1.4.3 Organismic Integration Theory

Organismic Integration Theory (OIT; Deci & Ryan, 1985) describes extrinsic motivation that is controlled by specific external contingencies such as attending a tangible reward or avoiding a threatened punishment. Organismic integration theory concerns the social settings that enhance or preclude internalising new behaviour, values, goals, or belief systems. The theory highlights the crucial role of support for autonomy and relatedness for the process of internalisation (Deci & Ryan, 1999). Four subtypes of extrinsic motivation have been identified and proposed to fall on a self-determination continuum of internalisation. More internalised motivation leads to more autonomously regulated behaviour, whilst more externalised motivation causes more controlled behaviours. The

subtypes include external, introjected, identified, and integrated regulation. The four forms of extrinsic regulation will be discussed from most extrinsic to more internalised (Deci & Ryan, 2000).

With *external* regulation, behaviours are performed to satisfy an external demand or obtain an externally imposed reward contingency (Ryan & Deci, 1999). Externally controlled behaviour is not internalised, and it tends to be poorly maintained when contingencies are withdrawn (Deci & Ryan, 2000). Individuals usually experience externally regulated behaviour as controlled or alienated, and their actions have an external perceived locus of causality when an action and outcomes are controlled by heteronomous forces rather than originating from someone's own behaviour (DeCharms, 1968).

With *introjected* regulation the contingent consequences are administered by the individuals to themselves (e.g., feelings of self-worth, guilt, or shame). Specifically, introjection represents regulation by contingent self-esteem (Ryan & Deci, 1999). A classic example of introjected regulation is ego involvement when an individual behaves in a particular way in order to enhance or maintain their self-esteem (Ryan, 1982). Although the regulation is internal to the person, it is not assimilated to the self. As a result, introjected motivation is still an unstable form of motivation, even though it is more likely to be maintained over time compared with external regulation (Deci & Ryan, 2000).

Identified regulation is a more autonomous form of extrinsic motivation occurring when individuals recognise and value the benefits of a behaviour. Individuals more fully accept it as their own by identifying with a behaviour's value (Ryan & Deci, 1999). For instance, accepting the benefits of exercising for their own health and well-being leads to people exercising more autonomously. In spite of this, identified

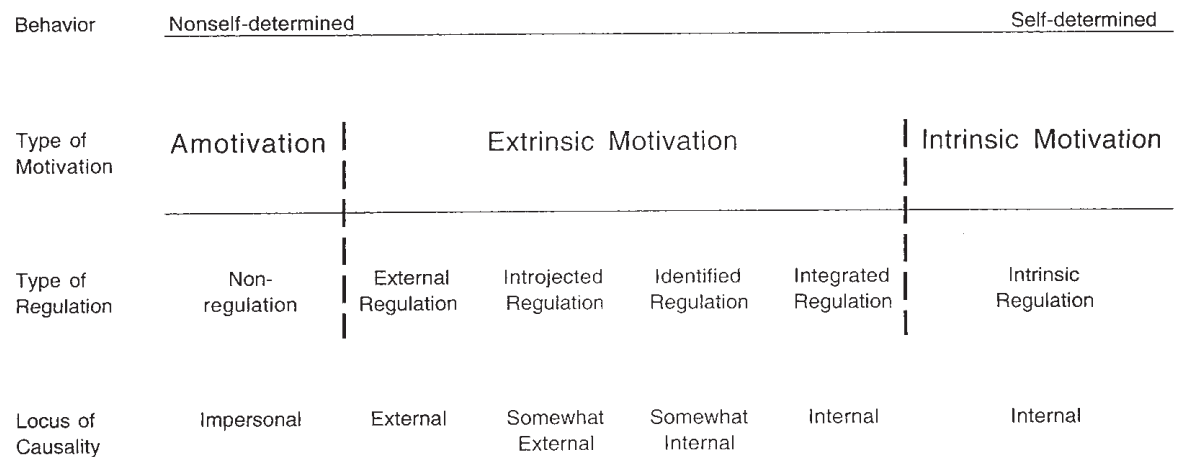
regulation still causes an extrinsically motivated behaviour that is performed for external benefits rather than being a source of enjoyment and satisfaction itself (Deci & Ryan, 2000).

Integrated regulation is the most internalised form of extrinsic motivation. It leads to integrating identified importance of behaviours with other aspects of an individual's self. Integrated regulations are fully consistent with an individual's values and identity, and this results in self-determined extrinsic motivation (Deci & Ryan, 2000). This form of regulation shares many qualities with intrinsic motivation, both being both autonomous and not conflicted with an individual's self. However, integrated regulation remains externalised as it motivates to behave in a specific way for presumed instrumental values with the outcomes separated from the behaviour, even though those outcomes are volitional and valued by the self (Ryan & Deci, 1999).

In addition, OIT identifies amotivation which is the lack of intention to act. Amotivated people do not act at all or they act with no sense of what they are doing. The reasons for such behaviour might include feelings of inability to achieve desired results due to lack of contingency or competence, lack of valuing the activity or the possible outcomes (Deci & Ryan, 2000). Figure 1.3 demonstrates the OIT taxonomy of types of motivation, arranged from left to right according to the extent to which the motivation is autonomous versus controlled.

Figure 1.3

A taxonomy of human motivation



Note. Reprinted from “The ‘what’ and ‘why’ of goal pursuits: Human needs and the self-determination of behaviour”, by E. Deci & R. M. Ryan, (2000). *Psychological Inquiry*, 11. Copyright 2007 by the American Psychological Association.

1.4.4 Applying Self-Determination Theory to Work and Retirement

Self-determination theory represents a broad framework for the study of human motivation and personality, its development and application have been widely researched across various environments including education, sports, health and medicine, religion, parenting, close relationships, and organisations (Deci & Ryan, 2008; Ryan, 2009). Substantial amounts of people’s lives are spent in workplaces, for example, British employees spend an average of 37 hours and 12 minutes a week at work (ONS, 2020). Work can affect well-being through contributing to individuals’ social life, relationships with others, feelings of developing and mastery, or financial freedom (Blustein, 2008; Crowe, Butterworth, & Leach, 2016). Work can play a significant role in providing basic psychological need satisfaction, and there has been emerging evidence on how to support motivation, wellness, and productivity at workplace through providing

basic need support (Gagné, 2014; Haski-Leventhal, Kach, & Pournader, 2019; Trépanier, Fernet, & Austin, 2016). Leaving work due to retirement can potentially lead to substantial decrease in need satisfaction, unless individuals find alternative environments where their basic needs could be supported.

Research examining changes in need satisfaction when individuals retire from employment is scarce. For example, Henning, Stenling, et al. (2019) explored the associations between types of preretirement work motivation and changes in need satisfaction after retirement and reported increase in autonomy satisfaction for full-time retirees, especially in those with low intrinsic work motivation. In another study, the strength of association between need satisfaction and well-being before and after retirement was assessed (Henning, Bjälkebring, et al., 2019), and the results demonstrated that autonomy was more closely related to well-being after retirement than before. However, due to fluctuations in retirement adjustment, there is a need for research to observe how both need satisfaction and frustration change in relation to well-being on multiple and frequent occasions over the retirement transition (Henning, Bjälkebring, et al., 2019). Furthermore, more understanding of how each basic need satisfaction and frustration changes in retirement is needed.

Autonomy satisfaction/frustration

Evidence suggests that perceiving oneself in control of the immediate environment is a crucial predictor of successful ageing (Ryff, 1989) and an important determinant of well-being in older adults (Rowe & Kahn, 1998; Zarit, Pearlin, & Schaie, 2003). During major life transitions such as retirement, perceived feelings of control, choice (De Vaus, Wells, Kendig, & Quine, 2007), and autonomy (Hansson, Buratti, Thorvaldsson, Johansson, & Berg, 2018) are particularly important for successful adjustment and life satisfaction. Retired adults can have an opportunity to enjoy the increased freedom and engage with

activities of their own choice (Hunter et al., 2007). However, maintaining one's autonomy after retirement might also become challenging for several reasons.

First, work is an important financial source that provides independence and freedom of choice. A decrease in financial sources after leaving employment might be associated with restricted activity choice and an increased likelihood of depending on the government or family members support, which can lead to autonomy frustration. Second, employment can provide a feeling of control over one's own job, responsibility, authority, and freedom to make work decisions (Dobre, 2013; Van den Broeck, Vansteenkiste, De Witte, Soenens, Lens, 2011). A retiree might experience a lack of all those work-related attributes, especially if there is no other substitute to satisfy those needs. Furthermore, retirement from managing positions is even more likely to cause a decrease in autonomy satisfaction as managing positions can provide greater feelings of power and control than non-managing positions (O'Reilly III, Parlette, & Bloom, 1980).

Additionally, people can retire for a variety of reasons. It might be a voluntary choice, for example, one would like to spend more time with their family and friends or dedicate their time to hobbies. However, an employee can be forced to retire, for example due to health reasons or corporate regulations. In that case, involuntary retirement causes feelings of lack of control over one's life and restricted choice (Szinovacz & Davey, 2005). Furthermore, if retirement is caused by or associated with health deterioration, an individual might face additional limitations in their choice of available activities (Dave, Rashad, & Spasojevic, 2006), which might lead to further autonomy thwarting and more negative effects on retirees' well-being.

Competence satisfaction/frustration

Employment is a source of competence satisfactions for many employees as the workplace provides an opportunity to demonstrate and develop one's skills and

knowledge (Boyatzis, 2008), achieve career-related goals, feel effective and useful (Moore, Cheng, & Dainty, 2002). Some retirees can successfully find other activities and roles to feel competent and useful, for example through volunteering (Lee & Brudney, 2008), exercising (Langan & Marotta, 2000), or other leisure activities (Lee, Payne, & Berdychevsky, 2020). However, for others it can be difficult to satisfy the need for competence through engaging with non-work-related activities (Houlfort et al., 2015). Retirement can also be associated with competence thwarting, for example, some retirees might have to acknowledge a reduced demand for skills and experience in their occupational niche (Luke, McIlveen, & Perera, 2016), and as a result feel incompetent. Furthermore, having non-retired family members, friends or a partner can cause a feeling of living a less significant and even shameful life (Osborne, 2012), which might result in competence thwarting and subsequently reduced well-being (Wang, 2007).

Relatedness satisfaction/frustration

Work can considerably affect people's social network. Evidence has demonstrated that an employee interacts with a greater diversity of people at work, than they would in their usual social situations (World Bank Group, 2013). A workplace increases frequency of social contacts, social outings and participation in recreation (Waddell & Burton, 2006) but also provides an opportunity to make meaningful relationships (Walsh, Huang, & Halgin, 2018). Furthermore, recent evidence has demonstrated that not only the level of closeness predicts need satisfaction in relationships but also rapport in interactions plays an important role in need support (Baker, Watlington, & Knee, 2020). Therefore, regular communication with colleagues can be a significant source of need support, especially if interactions are high in rapport.

After leaving a job due to retirement, an individual's social circle can be significantly reduced (Wrzus, Hänel, Wagner, & Neyer, 2013), which might cause a

decrease in need satisfaction. There might be a considerable reduction in relatedness satisfaction if a new retiree lacks social support and interaction outside of work, for example if other family members and friends do not live in close proximity. For that reason, married individuals might adjust to retirement better than single or widowed individuals, but this effect disappears when another partner is not retired yet (e.g., Moen, Kim, & Hofmeister, 2001; Wang, 2007). If both partners are retired, they tend to understand each other's needs better and provide companionship (Kim & Feldman, 2000), whereas when one partner is still employed they might not have time to engage in sufficient interaction with a retired one (Wang, 2007). Therefore, employment status of a spouse/partner can also be a predictor of relatedness satisfaction in retirement. In addition, recently retired adults might experience active relatedness thwarting, for example in case of forced retirement, when individuals do not feel being cared for by their former employers or colleagues (e.g., Chan, Gustafsson, & Liddle, 2015). As such, decrease in relatedness satisfaction or active relatedness thwarting after retirement might explain the reduction in well-being, especially if relationships outside of workplace cannot compensate missing relatedness support.

Alternative sources of need satisfaction in retirement

In this thesis, I posit that the loss in workplace-related need satisfaction after retirement can cause reduced well-being in some retirees. However, as discussed earlier, retirement does not always lead to reduced well-being. Some recent retirees might find alternative contexts to satisfy missing needs. For example, for many older adults the process of adjustment to retirement involves spending more time on hobbies, attending new clubs, or socialising with friends and families (Austrom, Perkins, Damush, & Hendrie, 2003; Wong & Earl, 2009). Those who can quickly replace their workplace need satisfaction with need satisfaction in other environments are more likely to maintain their well-being

after retirement or quickly recover after initial decrease. Understanding that different contexts can substitute for missing need satisfaction in retirement might be important for promoting health and well-being among retired adults.

Self-determination theory appears to be especially useful for understanding motivation and adherence to health behaviours. Particularly, SDT focuses on the provision of greater autonomy support and basic needs satisfaction in regulation of health behaviours (e.g., Williams, Grow, Freedman, Ryan, & Deci, 1996). Basic needs have been empirically confirmed to cause more internalised forms of motivation that lead to the initiation and long-term maintenance of health behaviours (Ng et al., 2012). Furthermore, according to Ryan, Patrick, Deci, and Williams (2008), satisfaction of the basic needs leads to better mental well-being, health-conductive behaviour, and subsequently physical health. As such, supporting basic needs as a mechanism to promote healthy activities over retirement transition can attain two goals: 1) promoting health behaviours during critical transitional time to later life, 2) supporting well-being in recent retirees.

1.4.5 Summary

Self-determination theory is not a specific retirement or ageing theory. However, it is posited that SDT can be used as a framework to explain the process of retirement adjustment and changes in well-being after retirement. Self-determination theory has potential to address the limitations of the existing retirement theories.

Unlike the existing retirement theories, SDT can provide a theoretical framework that explains fluctuations in well-being after retirement through the universal mechanism - changes in need satisfaction. Second, in accordance with SDT, basic psychological needs are universally important for humans' psychological well-being, and so can be applied to different sociocultural or economic backgrounds. Third, SDT provides a

strong underlying basis that determines humans' behaviour and links relevant causal factors of the behaviour to appropriate change methods. As such, utilising SDT for retirement process can have practical implications and potentially inform future interventions and services promoting healthy ageing.

Self-determination theory can potentially address some limitations of the existing retirement theories, in particular by explaining why certain resources, roles, and activities are likely to be beneficial for well-being and accepted by individuals. Basic need satisfaction and frustration might serve as a set of mediators between various factors and well-being in retirement, for example through the responses to different resources suggested by resources perspective framework (e.g., social, financial) and retirement adjustment (Henning, Stenling et al., 2019). Furthermore, need satisfaction can predict identities exploration, formation, and internalisation (Luyckx, Vansteenkiste, Goossens, & Duriez, 2009). Evidence has also suggested that need satisfaction can mediate the relationships between passion for work and retirement adjustment (Houlfort et al., 2015). Therefore, need satisfaction can potentially explain the mechanism that supports detachment from a work role and predicts exploration/acquisition of new roles and identities in retirement, processes described within role theory. Similarly, need satisfaction can explain why certain activities can be more meaningful than others and support more satisfying retirement experiences for different individuals.

It is worth noting, however, that there might be variables and processes in retirement that SDT cannot address fully. For example, SDT might not be adequate in explaining the effects of certain demographic, socioeconomic, or biological characteristics such as health status or finances. However, it is posited that SDT can provide a psychological mechanism explaining how health or financial status affect retirement experience, as both factors can facilitate freedom of choice for activities and

roles to engage with, thus supporting autonomy. Furthermore, financial freedom and physical independence can indirectly support relatedness and competence by providing an opportunity to engage with a variety of activities after retirement. Importantly, basic needs satisfaction or frustration can play a mediating role between various activities and roles one engages with and well-being in retirement and thus explain and predict the role of these activities in retirement adjustment.

In sum, the core postulation of this thesis is that SDT will be useful in understanding retirement experiences. Specifically, due to the loss of work-related support for autonomy, competence and relatedness, individuals might experience decrease in well-being but other contexts can substitute missing needs and mitigate the process of retirement adjustment. However, SDT might have its own limitations in explaining the complex process of retirement adjustment. Therefore, alternative explanations and mechanisms provided by other theories and frameworks will be also discussed.

1.5 Aims and Overview of the Thesis

The aims of the current PhD are:

- 1) to understand the changes that occur during the retirement transition– changes in need satisfaction alongside with other factors that might predict different retirement experiences such as identity changes (Lytle et al., 2015), social support (Earl, Gerrans, & Halim, 2015), coping strategies (Yeung, 2013), retirement and ageing expectations (Stephan, Fouquereau, & Fernandez, 2008);
- 2) to develop a pragmatic intervention encouraging those going through retirement transition to plan for and engage with an active lifestyle in order to regain

need satisfaction (as a substitute of the former work environment) whilst also benefit physical health and maintaining independence.

To address the aims above, the PhD includes four empirical research studies. The first study (Chapter 2) assessed changes in the psychological health of retirees from employment into a more stable experience of retirement over two years, and the factors associated with a more positive retirement (e.g., need satisfaction, need frustration, social networking, coping mechanisms).

Study two (Chapter 3) continued to examine the effects of psychological predictors in retirement adjustment but specifically focused on the role of personality traits. The study explored the proposition that personality might predict sensitivity to and responses to need supportive and thwarting events in retirement context. Vignette scenarios were utilised to describe basic psychological need supporting or thwarting situations relevant to retired adults.

Chapter 4 complemented the quantitative data collected in Chapters 2 and 3 with qualitative information collected from individuals at different stages of retirement, in order to get a more comprehensive understanding of a complex and multi-faceted retirement process (Reichstadt, Sengupta, Depp, Palinkas, & Jeste, 2010). Focus groups and individual interviews were employed to capture people's lived experiences of retirement and their perspectives on how the range of contextual factors affect retirement adjustment. Furthermore, Chapter 4 provided an in-depth understanding of the importance and meaning of health and activities to retired adults.

Finally, study four (Chapter 5) aimed to design an intervention to support a more adaptive, active retirement transition, following the intervention mapping protocol. The study designed a retirement planning intervention, utilised co-design workshops with stakeholders in reviewing and refining the intervention prototype. The intervention was

then presented for review from the target population – those approaching retirement and those who have experienced the retirement transition.

1.6 Outline of the Thesis Development

SDT is an underpinning theory of this thesis, which informed the development and interpretation of the series of inquiry. In particular, the first longitudinal study (Chapter 2) was developed with the goal to examine whether need satisfaction and need frustration could predict changes in well-being during retirement transition between- and within-individuals. This research was necessary to investigate the potential of SDT in explaining retirement adjustment and informing health promotion interventions for the target population group.

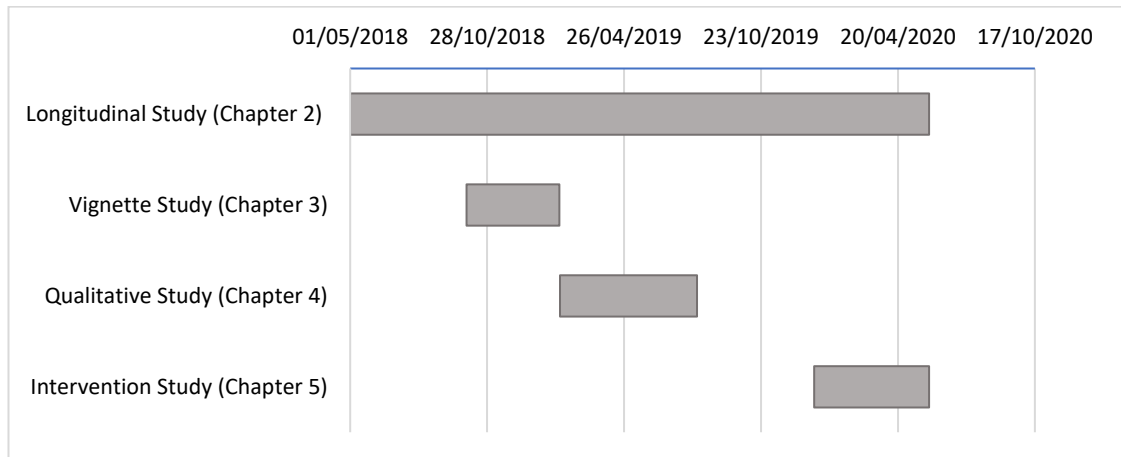
The longitudinal study identified the variety of retirement experiences in terms of well-being and need satisfaction. One explanation for this diversity could be attributed to individual differences. Research evidenced the important role of individual differences in other life transitions/events, for example personality might affect our ability to cope with life stresses (Parkes & Hughes, 2017), life transitions such as marital outcomes (Kelly & Conley, 1987), career change (Page, Bruch, & Haase, 2008), community relocation (Kling, Ryff, Love, & Essex, 2003), and widowhood (Utz, Carr, Nesse, & Wortman, 2002). Although the previous literature suggested the associations between personality and retirement adjustment, the mechanism for this relationship remained unknown (e.g., Robinson, Demetre, & Corney, 2010). According to recent SDT research, personalities might predict perceptions and behaviours in the response to need thwarting or support (e.g., Mabbe et al., 2016). Therefore, the subsequent study of this thesis (Chapter 3) explored how personality can potentially explain retirement

experiences due to differences in the perception of and behavioural responses to retirement-specific contexts.

The diversity of retirement experiences could also be explained by the extent to which the environment supports or thwarts the basic psychological needs. The quantitative design of the longitudinal study of this thesis was limited to specific pre-selected variables and did not explore the impact of different environments on retirement adjustment. Contrarily, qualitative research could i) explore a wider range of factors and importantly understand the interplay that determine complex retirement experiences, ii) enhance our understanding of how different social environments can contribute to retirement adjustment, and iii) understand the role of need supportive and thwarting contexts in retirement adjustment. As such, the next study (Chapter 4) of this thesis applied qualitative methods to complement the longitudinal research and further explore the potential of SDT in understanding retirement adjustment. The studies described in Chapters 3 and 4 were designed and conducted almost simultaneously (see Figure 1.4).

Finally, the ultimate aim of exploring retirement adjustment and the role of SDT is to enhance our understanding of how health and well-being can be promoted during the retirement transition. Therefore, the last study of this thesis (Chapter 5) focused on developing a health promotion intervention. The results of the longitudinal and the qualitative studies, as well as SDT and retirement literature informed the design of the intervention. Particularly need support and the components of retirement adjustment identified in Chapters 2 and 4 (i.e., identity support, social interaction, independent choice, and planning) were embedded in the new intervention.

Figure 1.4 Timeline of data collection



Utilising mixed methods

It has been understood that utilising both qualitative and quantitative approaches in this thesis might lead to debates in terms of mixing different epistemological and ontological assumptions. Both quantitative and qualitative research purists view their paradigms as ideal for research and advocate the incompatibility thesis (Howe, 1988), which posits that quantitative and qualitative paradigms, including their associated methods cannot and should not be mixed because of the opposite views on reality and nature of knowledge (Johnson & Onwuegbuzie, 2004). However, researchers advocating the integration of quantitative and qualitative methods argue against the incompatibility thesis in favour of compatibilist approach such as pragmatism (Glogowska, 2011; Johnson & Onwuegbuzie, 2004; Shaw, Connelly, & Zecevic, 2010). Pragmatism rejects traditional dualism (e.g., subjectivism vs. objectivism) and justifies the use of mixed methods if they can address the research questions. A pragmatic approach encourages researchers who use different methods with different paradigms to pursue joint actions to develop a fuller understanding of a research phenomenon (Morgan, 2007).

While sociodemographic and psychological factors that might affect retirement experiences were tested quantitatively in the first two studies of this thesis, it is equally important to understand the unique experience of each retirement journey, as individuals' beliefs, expectations, feelings and thoughts about the same contextual factors can play a significant role in shaping the multifaceted retirement phenomena (Löckenhoff, Terracciano, & Costa, 2009). Furthermore, it was crucial to examine quantitatively the link between need satisfaction/frustration and well-being. However, the qualitative research provided an opportunity to explore if and how all the variety of different environments and experiences could support or thwart basic needs of individuals in the retirement transition.

Therefore, with pragmatic approach's emphasis on individuals' interpretation of reality, a qualitative design was used in Chapter 4 in order to provide us a more comprehensive picture of retirement process and address the question on what and how different factors may contribute to retirement adjustment through the lived experiences of the participants. Additionally, Chapter 5 utilised qualitative (workshops and interview) and quantitative methods as a part of systematic pragmatic intervention development. Using mixed methods allowed to refine and improve the prototype intervention, acquire a better understanding of the contexts where health interventions could be implemented, and to evaluate the final design.

Chapter 2

Longitudinal Tracking of Psychological Changes over Retirement Transition

2.1 Introduction

2.2.1 Importance of Positive Retirement Transition Experiences

Retirement from full time employment represents a major life transition, one which confronts individuals with new circumstances and environmental demands (Jonsson, Borell, & Sadlo, 2000; Perren, Keller, Passardi, & Scholz, 2010). For many, retirement is the first time that they need to adapt to age-related challenges such as role changes, lifestyle changes at home and within community, changes in social networks, and practical concerns about financial situation and existing or potential health issues (Wang, 2007; Wang & Shi, 2014; Hesketh, Griffeth, & Loh, 2011). Importantly, establishing new habits during retirement transition might have a direct impact on subsequent lifestyle, and physical and psychological well-being (Atchley, 1989; Henning, Lindwall, & Johansson, 2016). Therefore, an adaptive retirement transition is important for experiencing a positive retirement and maintaining physical and psychological health in later life (Yeung & Zhou, 2017).

Adjustment to the changes associated with retirement transition is a dynamic and highly individual process, requiring adaptive coping mechanisms to be developed in the context of an individual's circumstances (Shultz & Wang, 2011). Not only do retirement experiences vary between people (interindividual), research suggests that experience

Elements of this research were presented at the BASES Student Conference, Newcastle upon Tyne, UK, April 2018.

might also differ within an individual (intraindividual), as demands on the retiree change over time (Wang, 2007; Taylor, Goldberg, Shore, & Lipka, 2008). Thus, retirement should not be viewed as a single event, but as a complex process which evolves over time (Beehr & Bennett, 2007), and involves transition from employment to retirement and individual development over retirement course (Shultz & Wang, 2011). As a result, significant between- and within-individual differences in retirement experiences may occur and lead to various retirement adjustment trajectories such as: maintaining (i.e., well-being remains stable), recovering (i.e., well-being increases after leaving employment), or U-shape patterns (i.e., well-being drops initially and then recovers with retirement adjustment; Wang, 2007).

Retirement literature has reported a range of environmental and individual predictors that contribute to differences in retirement experiences. Well-established psychosocial and economic approaches for studying retirement adjustment emphasise the role of financial planning (Choi & Jang, 2016; Topa, Segura-Camacho, & Pérez, 2017), health status and demographic characteristics (e.g., gender; Jacobs-Lawson, Hershey, & Neukam, 2004), marital status (e.g., Price & Nesteruk, 2010; Radl & Himmelreicher, 2015), occupation and socioeconomic status (e.g., McFall, Sonnega, Wills, & Hundomiet, 2015). However, more recent research has focused on the unique contribution of psychological factors in shaping retirement experiences, for example social support (Haslam et al., 2019), identities (Waters, Briscoe, Hall, & Wang, 2014), and personality (Robinson, Demetre, & Corney, 2010). It has been demonstrated that the impact of some psychological factors and processes in retirement adjustment can be as significant as the effects of financial or sociodemographic contributors (Wang & Shi, 2011).

As highlighted earlier, retirement is a dynamic process associated with numerous psychological changes, however there is a limited evidence about continuity and changes in psychological indicators of retirement adjustment across individuals before, during, and following retirement. Therefore, more research to approach the complexity of well-being in retirement is warranted, particularly longitudinal observations (Lindwall et al., 2017). Additionally, there is a gap in the understanding of psychological mechanisms that shape individual retirement trajectories (Lindwall et al., 2017; Löckenhoff, 2012). Contributors to retirement adjustment vary in nature (e.g., financial, biological, psychological factors) and perceived importance for different individuals (Hansson, Buratti, & Johansson, 2019), which makes it difficult to compare their relative importance for changes in retirement well-being. Therefore, there is a need for a more universal mechanism for retirement adjustment explaining why and how changes in well-being might occur (Stenling et al., 2020). It is posited that SDT (Deci & Ryan, 1985, 2000) can offer an explanation for retirement adjustment through changes in the levels of need satisfaction and frustration experienced.

As such, the present study had two aims. First aim was to observe changes in several psychological predictors (i.e., social connectedness, loneliness, identity, coping strategies) studied in previous research across individuals over retirement transition. Second aim was to examine a novel approach to understanding retirement adjustment informed by SDT (Deci & Ryan, 1985; 2000), specifically, Basic Psychological Needs Theory (BPNT; Deci & Ryan, 1985), a sub theory of SDT. The subsequent introduction will describe key psychological factors which, according to previous research, might influence the experience of retirement transition, and the key tenants of BPNT and identify its utility in understanding adaptive and maladaptive retirement adjustments.

2.2.2 Psychological Predictors of Retirement Adjustment

Social connections with others are crucial for retirement adjustment and healthy ageing due to the provision of a sense of purpose, meaning in life, and the feelings of belongingness (Haslam et al., 2019; Steffens et al., 2016). During retirement, social support and the size of social networks can be compromised (Taylor et al., 2008), which may lead to loneliness (a subjective sense of lacking social or familial contact) and isolation (separation from social or familial contact, community involvement, or access to services; Cacioppo & Cacioppo, 2018). Loneliness and isolation might present considerable risks to an individual's well-being, physical health, and successful retirement adaptation (James, Wilson, Barnes, & Bennett, 2011; Lund, Nilsson, & Avlund, 2010; Taylor et al., 2008). Most studies have examined retirees' social support only at a point before or after retirement, so the change in social support over transition from employment to retirement is not well studied (Lee, 2016). Furthermore, the number of social contacts can be less crucial for retirement adjustment than the satisfaction with existing relationships and feeling of loneliness, and evidence on changes in loneliness over retirement transition is also lacking (Hawkley & Kocherginsky, 2018).

Retirement also triggers personal and social identity transitions, and a search for new meaningful selves (Waters et al., 2014). One of the most significant identity shifts occurring during retirement transition relates to the loss of a vocational identity (Wang, Hall, & Waters, 2014). For some individuals with a strong attachment to their professional roles, loss of vocational identity due to retirement can have particularly negative effects on their well-being (Reitzes & Mutran, 2004). An alternative 'retiree' identity can be difficult to accept by some retirees as it is closely linked to an 'older person' identity, and older age is often viewed negatively. Some retirees are able to find meaning in other roles and activities (e.g., family, hobbies, volunteering), which can

provide greater diversity in identity dimensions and increasing life satisfaction through retirement (Teuscher, 2010). However, adjustment to the loss of a work role and acquiring new identities is an evolving process, and evidence on how identities develop over retirement transition is lacking (Bordia, Read, & Bordia, 2020).

In addition, coping strategies mediate the relationships between retirement stressors and well-being and therefore contribute to retirement adjustment (Herzig, 2014). Coping mechanisms are defined as ‘cognitive and behavioural efforts made to master, tolerate, or reduce external and internal demands and conflicts among them’ (Folkman & Lazarus, 1980, p. 223) and are divided into two major groups: adaptive and maladaptive. Adaptive coping strategies are considered to be effective ways of managing stressful situations that can help to improve well-being, whereas maladaptive coping reduces symptoms while maintaining or strengthening the stressor and eventually may lead to negative outcomes for well-being (Snyder, 1999; Zeidner, & Endler, 1995).

Evidence suggests that as people get older, they are more likely to use adaptive coping strategies than maladaptive (Chen, Peng, Xu, & O’Brien, 2018). Literature has also described the strategies used by older adults to cope with ageing process (Ribeiro, Borges, Araújo, & Souza, 2017). For example, in the response to health deterioration, bereavement, and reduced social integration, some older adults used adaptive strategies such as search for social support and acceptance, whereas others reported maladaptive coping mechanisms including isolation, distancing, and denial (Filiatrault & Desrosiers, 2011; Ribeiro et al., 2017). However, despite retirement being a significant event in later life, there is still a lack of evidence on the prevalent use of particular coping mechanisms by individuals going through retirement transition (Herzig, 2014). A better understanding of coping strategies utilised by the target population might help to support

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retirement adjustment, for example through encouraging retired adults to strategically employ these strategies in the response to possible challenges (Nuttman-Shwartz, 2004).

As such, to better understand the process of psychological adjustment, there is a need for a longitudinal observation of the described predictors over the transition from employment to retirement. The longitudinal design will also allow testing changes in need satisfaction, need frustration, and well-being over retirement transition and test the causation between need satisfaction/frustration and well-being. The next section is going to discuss why and how changes in need satisfaction and frustration may underpin retirement adjustment.

2.2.3 Need Satisfaction, Need Frustration, and Well-being over Retirement Transition

Self-determination theory, specifically the basic psychological needs sub -theory (Deci & Ryan, 1985), can potentially explain the psychological mechanisms that might underpin changes in well-being over retirement transition. According to SDT, well-being and motivation for behaviours are influenced by social environments that can support or thwart three basic psychological needs for competence, autonomy, and relatedness. Competence involves feelings of effectiveness and mastery (Deci & Ryan, 1985), autonomy refers to feelings of volition, choice, and internal control (DeCharms, 1968; Deci & Ryan, 1985), and relatedness involves feelings of connection and involvement with others and is experienced both when being cared for and when caring for others (Baumeister & Leary, 1995; Deci & Ryan, 1985).

For many individuals, one of life's most important and fruitful need supportive contexts is the workplace (Haski-Leventhal, Kach, & Pournader, 2019; Trépanier, Fernet, & Austin, 2016). Employment can provide feelings of belongingness and connectedness (relatedness support), control over decisions (autonomy support), and

feelings of achievement, personal and professional development (competence support). In line with SDT, this consistent provision of daily need satisfaction would be associated with personal development, effective functioning, and psychological health (Deci & Ryan, 2000). However, the sudden removal of such a fruitful need supportive context or even active need thwarting (e.g., forced retirement) might lead to a drop in daily need satisfaction, need frustration and subsequently more negative outcomes (e.g., ill-being, and non-optimal functioning; Adie, Duda, & Ntoumanis, 2008; Jang, Reeve, Ryan, & Kim, 2009).

Importantly, retired individuals can obtain need satisfaction from other activities, roles, and relationships but this adaptation is a gradual process (Hansson, Buratti, Thorvaldsson, Johansson, & Berg, 2018), and it takes additional efforts such as social planning (Yeung & Zhou, 2017) to find new need supportive contexts. Therefore, during retirement transition some people might experience an initial drop in well-being, but as adaptation progresses, their well-being restores. By contrast, those who engage with need supportive contexts from the beginning of their retirement might maintain or even experience an increase in well-being. Therefore, it is posited that experiences of need satisfaction and frustration might underpin changes in well-being over retirement transition.

Whilst the effects of need satisfaction and frustration on well-being are proposed to be universal for all people (Ryan & Deci, 2017; Ryan & LaGuardia, 2000), and basic need satisfaction remains important for well-being over the lifespan, applicability of research examining the relationship between need satisfaction and well-being is only limited to young or middle-aged individuals (e.g., Chen et al., 2015; Reis, Sheldon, Gable, Roscoe, & Ryan, 2000). Furthermore, there has been a limited evidence on

within-individual changes in need satisfaction and well-being over the lifespan (Henning, Bjälkebring, et al., 2019).

Recent research targeting older adults suggested that satisfying some needs might become less important in later life (e.g., Ferrand, Martinent, & Durmaz, 2014; Neubauer, Schilling, & Wahl, 2017; Vanhove-Meriaux, Martinent, & Ferrand, 2018). For example, Neubauer and colleagues (2017) identified that competence but not autonomy predicted within-individual fluctuations in subjective well-being among very old adults (87–97 years at baseline), therefore the results only partially supported association between need satisfaction and well-being. Neubauer and colleagues suggested that high vulnerability in later life might change the importance of basic needs for well-being. These studies did not have data on ‘younger’ old age groups (e.g., 60+) or individuals experiencing retirement transition. While there are specific challenges and losses that might affect people’s priorities and experiences in a very old age (Van Assche et al., 2018), retirement transition has its own changes and challenges (e.g., lifestyle changes, financial and health deterioration), which might also affect the relationships between need satisfaction and well-being (Stenling et al., 2020).

To date, there exists only one longitudinal study that examined changes in the strength of association between need satisfaction and well-being in individuals experiencing retirement transition in a longitudinal design (Henning, Bjälkebring, et al., 2019). The results have demonstrated that satisfaction of all three needs was positively related to well-being over retirement transition, and autonomy was more closely related to well-being after retirement than before. At the within-person level, only autonomy and relatedness but not competence satisfaction was positively related to well-being.

However, it is argued that Henning, Bjälkebring, and colleagues (2019) might have missed out some important changes in different aspects of well-being as their data were only collected annually. As the first year of retirement is often associated with the most significant and frequent life changes for retirees, the most rapid changes in well-being are also expected during this period (Gall, Evans, & Howard, 1997). There is a need for more frequent observations of need satisfaction and well-being over the first year of retirement (Henning, Bjälkebring, et al., 2019). Furthermore, no study has measured the association between need frustration and well-being in individuals experiencing retirement transition.

To test the associations between need satisfaction, need frustration and well-being, our hypotheses are as follows -

Hypothesis 1: At the within-person level, there is a positive association between need satisfaction and well-being over retirement transition, and a negative association between need frustration and well-being.

Hypothesis 2: At the between-person level, there is a positive relationship between need satisfaction and well-being over retirement transition, and a negative relationship between need frustration and well-being.

Hypothesis 3: Social networking would be lowest at the start of retirement (first 3 months) and would subsequently increase up to 12 months after retirement.

Hypothesis 4: Feelings of loneliness would be greatest at the start of retirement (first 3 months) and would subsequently decrease up to 12 months after retirement.

Hypothesis 5: Participants' total identity would decrease throughout the retirement transition period up to 12 months after retirement. The importance of occupational

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identity would decrease throughout the retirement period, whereas the values of family, leisure activities, and age identities would increase.

Hypothesis 6: The use of approach coping strategies would be more prevalent than the use of avoidance strategies over retirement transition period. The most common coping strategies would be active coping, emotional support, and planning.

2.2 Methods

2.2.1 Participants

An opportunistic sample of 30 participants who were experiencing the retirement transition ($M_{\text{age}} = 61.6$, $SD = \pm 4.46$, $Male = 10$) were recruited to take part in the study. Inclusion criteria included individuals who had recently retired (0-12 months since retirement) and those who plan to retire from paid employment within the next six months). Retired adults who continued to work part-time but reduced the total number of working hours to of a maximum of 10 hours per week were also included. People with bridge employment that requires more than 10 hours of work commitment per week might not experience considerable changes in their lifestyles, identity, social circles, and personal accomplishments, and therefore their retirement adjustment can differ significantly (Topa, Alcover, Moriano, & Depolo, 2014). All participants were native English speakers recruited through diverse sampling approaches such as research centre mailing list, third-sector organisations (e.g., Voice, Elders Council, Later Life), private sector organisations (e.g., local cafes, pubs, shops, and golf clubs). After reading the information sheet (Appendix 6.A), all participants provided informed consent (Appendix 6.B) prior to completing the questionnaire pack (see Appendix 6.C). The study protocol was approved by the Institutional Ethics Board. After completing the study, participants received the participant debrief sheet (see Appendix 6.D).

2.2.2 Procedure

This longitudinal study consisted of nine timepoints of data collection: time 1 was pre-retirement, up to 6 months before participants retired from their full-time jobs. Timepoints 2- 9 were focused on the retirement experience, specifically at 0-1, 3, 6, 9, 12, 24, 36, and 42 months after retirement. Participants enrolled in the study at different time points of data collection, as such the number of observations varies at each time point (see Table 2.1). Participants were provided with the choice of completing questionnaires either electronically or in hard-copies, which were returned in pre-stamped envelopes.

2.2.3 Measures

At each assessment period, each participant completed the following questionnaires -

Short Warwick-Edinburgh Mental Well-being Scale (SWEMWBS; see Appendix 6.C).

The SWEMWBS was designed to measure both the feeling and functioning aspects of positive mental well-being, and consists of seven items, anchored from 1 (*None of the time*) to 5 (*All of the time*). Example items include '*I've been feeling optimistic about the future*' and '*I've been feeling relaxed*'. The SWEMWBS has evidenced adequate internal consistency and reliability to be used in populations with or without mental health issues (Haver, Akerjordet, Caputi, Furunes, & Magee, 2015), and has been widely used in population surveys in the UK and elsewhere (e.g., Health Survey for England, Natcen Social Research, and University College Medical School, 2010; Koushede et al., 2019).

Basic Psychological Needs Satisfaction and Frustration Scale (Chen et al., 2015; Appendix 6.C). This scale includes 24 items, with each need (autonomy, competence and relatedness) being assessed via eight items, four of which tap into need satisfaction (e.g., '*I feel a sense of choice and freedom*' [autonomy satisfaction], '*I feel that the*

people I care about also care about me’ [relatedness satisfaction], *‘I feel confident that I can do things well’*, [competence satisfaction]) and four of which tap into need frustration (e.g., *‘I feel pressured to do too many things’* [autonomy frustration], *‘I feel excluded from the group I want to belong to’* [relatedness frustration], *‘I feel insecure about my abilities’* [competence frustration]). Participants responded to each statement on a 1 (*Not true at all*) to 5 (*Completely true*) Likert-scale. The scale was formally validated in four different cultural samples - Peru, US, China, and Belgium, the Cronbach’s α for autonomy, relatedness, and competence satisfaction were 0.69, 0.77 and 0.81 respectively (Chen et al., 2015). The scale assesses each need satisfaction and frustration separately but also allows calculating their combined effects on well-being.

The *De Jong Gierveld 6-Item Scale Loneliness Scale* (De Jong Gierveld & Tilburg, 2006; Appendix 6.C). The scale includes three statements concerning ‘emotional loneliness’ (e.g., *‘I experience a general sense of emptiness’*) and three statements for ‘social loneliness’ (e.g., *‘There are plenty of people I can rely on when I have problems’*). Participants responded to each statement on a 1 (*Not true at all*) to 5 (*Completely true*) Likert-scale. There is a substantial body of evidence supporting the scale’s reliability and validity (Sansoni, Marosszeky, Sansoni, & Fleming, 2010). The scale was specifically designed for use with older people in a number of languages (De Gierveld & Van Tilburg, 2010; Lauder, Sharkey, & Mummery, 2006; Leung, De Jong Gierveld, & Lam, 2008).

The *Lubben Social Network Scale 6-item* (LSNS-6; Lubben & Girona, 2003; Appendix 6.C). The LSNS-6 measures the level of perceived social support through the size, closeness, and frequency of contacts of a respondent’s social network. The LSNS-6 consists of six items, with three items measuring perceived social support from family (e.g., *‘How many relatives do you see or hear from at least once a month?’*) and three

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items measuring friends support (e.g., '*How many friends do you see or hear from at least once a month?*'). The responses included six options that vary from '*None*' to '*Nine or more*' on a Likert-scale for each question. Social isolation is inferred from an overall low score. The LSNS-6 possesses adequate validity, good internal consistency reliability, and a sound factorial structure (Cronbach's α was 0.83; Lubben et al., 2006). The LSNS-6 was reported to be useful for screening for social isolation and in epidemiological studies (Sanson et al., 2010).

Brief Coping Orientation to Problems Experienced scale (Brief COPE; Carver, 1997; Appendix 6.C). The Brief COPE was designed to examine coping reactions in naturally occurring settings. The questionnaire consists of 14 subscales, each measures a conceptually different coping reaction including: self-distraction, active coping, denial, substance use, use of emotional support, use of instrumental support, behavioural disengagement, venting, positive reframing, planning, humour, acceptance, religion, and self-blame. Each subscale consists of two items. Response options range from 1 (*Don't do this at all*) to 4 (*Do this a lot*) on a Likert-scale. All the sub-scales have demonstrated acceptable internal reliability (Cronbach's α ranged between .50 and 0.90 Carver, 1997). The instrument has been used to conduct research on various populations, and it is widely used in health-relevant studies (Caver, 1997; Su et al., 2011).

Measure of identity (Teuscher, 2003; Appendix 6.C) is a 14-item measure of identity dimensions during transitions to retirement and ageing. The identity dimensions are nationality, family role, marriage/relationships, profession or occupation, voluntary work, physical appearance, personality, age, life story, belongingness to associations and organisations, friends, leisure time activities, personal values and beliefs, retirement status. The respondents had to rate how important each of the 14 dimensions is in characterising themselves. The responses included five options ranging from '*Very*

important’ to *‘Not important at all’* on a Likert scale. The scale had a Cronbach’s α of .76, which can be considered as satisfactory (Teuscher, 2003).

2.3.4 Data Analysis

Normality of data was checked using Shapiro–Wilk test (Fogarty, 2018). For non-normal distribution, appropriate non-parametric tests will be performed to test whether and how various potential predictors of retirement adjustment (i.e., loneliness, social networks, identities, coping strategies) change over the retirement transition using R (version 3.6.2; packages ‘haven’, ‘ggplot2’, ‘ggpubr’, ‘Rmisc’). To test the association between the levels of need satisfaction and frustration and well-being in retirement transition between- and within- individuals, multilevel modelling analysis was conducted in the ‘nlme’ package.

An advantage of using multilevel modelling for analysing longitudinal data is its ability to distinguish between person effects, that is, differences between individuals (e.g., do people who feel more need satisfaction experience higher well-being in comparison to people who feel less need satisfaction?), and within person effects, that is, changes within an individual over time (e.g., do people report higher well-being at time points when they feel more need satisfaction than at time points when they felt less need satisfaction?). Distinguishing these two levels is essential as they may sometimes give different or even opposite patterns of results, however some studies mix within and between level associations, which can lead to erroneous conclusions about psychological processes (Hofer & Sliwinski, 2001; Neubauer et al., 2017; Robitaille et al., 2014).

Furthermore, multilevel modelling is flexible in allowing for missing values, having a different number of data collection time points for each participant, and when there is an unequal spacing of time point intervals both within a given participant and

across participants. It is also possible to include participants who had only one data collection point as this provides partial information in the analysis provided that most subjects have two or more observations (Locascio & Atri, 2011). Additionally, multilevel modelling allows for small sample sizes (as few as 10 for continuous outcomes at level-2) with restricted maximum likelihood estimation (REML; McNeish & Stapleton, 2016; see the glossary). When the number of clusters is small, REML provides less biased estimates of variance component (Hoyle & Gottfredson, 2015). It should be noted, however, that in the current study the number of measurement points varied between 6 and 1, and the smaller number of observations per subject can make the estimation of random effects less accurate (Locascio & Atri, 2011), therefore the model focused on estimating fixed effects of the predictor variables.

2.3 Results

2.3.1 Sociodemographic Characteristics

Table 2.1 illustrates means and standard deviations for participants sociodemographic characteristics over the course of the study (pre- and post-retirement). The sample statistics include all individuals that had valid data on retirement status at the respective time point. Overall, there were more female participants at pre-retirement (T_{-1}) and at data collection points for the first twelve months of retirement, the last three assessments (24, 36, and 42 months after retirement) had more male participants. Average age at each time point varied from 60.46 years (3 months after retirement) to 68.67 years (36 months after retirement). More than half of the participants were married and reported education level as Higher Education or equivalent.

Table 2.1

Sociodemographic characteristics of the participants

	T_{-1} (SD)	T_0 (SD)	T_3 (SD)	T_6 (SD)	T_9 (SD)	T_{12} (SD)	T_{24} (SD)	T_{36} (SD)	T_{42} (SD)
N of observations	12	13	13	17	19	21	11	3	1
Age	61.08 (4.96)	60.69 (5.78)	60.46 (4.61)	60.94 (4.25)	61.37 (4.34)	61.67 (4.27)	63.45 (3.47)	68.67 (2.89)	64 (NA)
Gender, %	100 F	69.23 F	69.23 F	52.94 F	57.89 F	66.67 F	45.45 F	100.00 M	100.00 M
Education, %	66.67 HE	53.85 HE	69.23 HE	70.59 HE	68.42 HE	76.19 HE	81.82 HE	66.67 HE	100.00 HE
Marital status, %	66.67 Mr	92.31 Mr	76.92 Mr	76.47 Mr	78.95 Mr	71.43 Mr	72.73 Mr	100.00 Mr	100.00 Div

Note. T_{-1} 0-6 months prior retirement; T_0 0-1 months after retirement; T_3 3 months after retirement; T_6 6 months after retirement; T_9 9 months after retirement; T_{12} 12 months after retirement; T_{24} 24 months after retirement; T_{36} 36 months after retirement; T_{42} 42 months after retirement. NA Non applicable; F Female; M Male; HE Higher Education or equivalent; Mr Married; Div Divorced

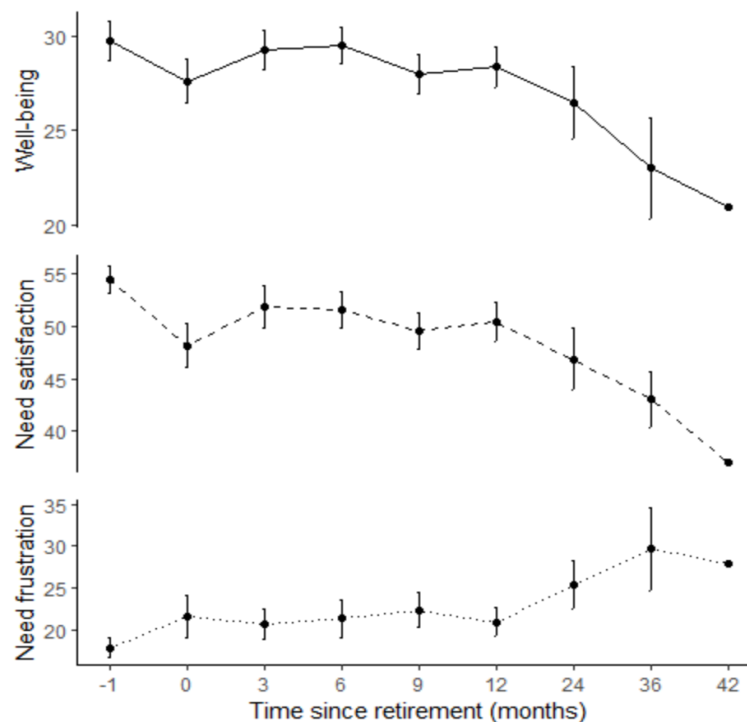
2.3.2 Well-Being, Need Satisfaction, Need Frustration

Means and standard deviations for well-being, total need satisfaction and need frustration over the course of the retirement transition are presented in Figure 2.1. The data evidenced similar trajectories of change in well-being and need satisfaction – the most significant drop around T_0 when participants exit employment, with an increase around T_3 (3 months after retirement), followed by gradual decrease in the subsequent months. In contrast, the change in need frustration over retirement transition is inversed with the increase within the first month after retirement, drop around 3 months after retirement, followed by the subsequent gradual increase.

Trajectories in Appendix 6.E illustrate each participant's change in well-being, need satisfaction, and need frustration across study participation. Whilst examining singular participant trajectories is limited in generalisability (Gilmartin-Thomas, Liew, & Hopper, 2018), it does allow for visual interpretation of transition experiences. Visual interpretation of the individual transition plots broadly evidenced five different patterns in well-being during the retirement transition: a stable trajectory (five participants), an increasing pattern (six participants), a decreasing pattern (six participants), a U-shape pattern when initial decrease in well-being was followed by the increase (four participants), an inverted U-shape pattern when an initial increase in well-being followed by decrease (six participants). Three participants had only one point of data collection, so no changes in well-being were observed.

Figure 2.1

Means for well-being, need satisfaction, and need frustration over the retirement transition



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Note. This figure demonstrates the change in mean well-being, need satisfaction and need frustration over the retirement transition. Error bars present standard errors. ‘-1’ on the x-axis represents pre-retirement. In the current study that could be 0-6 months prior to retirement.

Multilevel modelling

Hypothesis 1: At the within-person level, there is a positive association between need satisfaction and well-being over retirement transition, and a negative association between need frustration and well-being.

Hypothesis 2: At the between-person level, there is a positive relationship between need satisfaction and well-being over retirement transition, and a negative relationship between need frustration and well-being.

Hypotheses 1 and 2 were tested using multilevel modelling, specifically a stepwise procedure was employed. First, an intercept only model (Model 1) was computed, which only defined level-2 – participants. The level-1 predictors were not specified for the null model, and the outcome variable (well-being) was assumed to be on the level-1. The purpose of building the null model was to explore how much a grand mean of the outcome variable or intercept differed from 0 and to proceed with further analysis.

Next, random intercept, random slope model (Model 2) was built. Random intercepts represent the deviation of each participant’s well-being from the grand mean value at the first measurement occasion. Random slopes describe the deviation of well-being for each participant from the mean over time. For this model, measurement occasions over retirement transition were added as a predictor in level-1 to allow for the effects of retirement timing on well-being *within* participants to be examined (random slopes). To allow for potential differences in the effects of retirement timing on well-

being *between* individuals, measurement occasions were also added in level-2 (random intercept).

Finally, Model 3, for which the effects of need satisfaction and need frustration were added as predictors in the model, these new predictor variables were centred at the grand mean (means for each participant) and added as level-2 predictors to obtain unbiased between-level estimates (Enders & Tofighi, 2007; Ryu, 2015). To obtain within-level interaction estimates, need satisfaction and need frustration were person-mean centred (estimated mean for each participant was subtracted from each measurement occasion) and added as level-1 predictors in the model (Lüdtke et al., 2008).

Table 2.2 demonstrates the effects of predictors and estimates that indicate the fit of the model. The intra-class correlations (ICC) coefficient (see the glossary) for the three models were computed to assess the variance in the variables at the between-person level. For the intercept only model, the ICC was 85 %, which suggests a great proportion of within-person variance and that multilevel model should be used to account for clustering. The ICC decreased for Model 3 (54%) which suggests i) an improved model fit by including need satisfaction and need frustration and ii) that the added predictors account for the within-person variance. The decrease in deviance statistics (see glossary) from Model 1 to Model 2 and then Model 3 (Table 2.2) also indicates better fit of the model when adding predictors.

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Table 2.2

Estimates from multilevel models with subjective well-being regressed on basic psychological need satisfaction and frustration

		Model 1 <i>B(SE)</i>	Model 2 <i>B(SE)</i>	Model 3 <i>B(SE)</i>
	Intercept	28.00 (.84)**	28.19 (.77)**	10.49 (5.94)
	Retirement Time		-.014 (0.04)	-.02 (0.03)
Within-person effects	TNS			.21 (.07)*
	TNF			-.08 (.06)
Between-person effects	TNS			.40 (.09)**
	TNF			-.09 (.08)
Model summary	Residual variance (within)	1.81	1.62	1.67
	Residual variance (between)	4.34	3.76	3.12
	Deviance Statistic	521.41	520.17	473.68
	ICC (%)	85	84	54

Note. TNS Total need satisfaction; TNF Total need frustration

* = $p < .05$, ** = $p < .001$

Hypothesis 1: At the within-person level, there is a positive association between need satisfaction and well-being over retirement transition, and a negative association between need frustration and well-being.

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As hypothesised, higher levels of need satisfaction positively predicted well-being ($B = .20$, $SE = .07$, $p < .05$). However, contrary to the hypothesis, higher levels of need frustration did not negatively predict well-being ($B = -.08$, $SE = .06$, $p < .14$).

Hypothesis 2: At the between-person level, there is a positive relationship between need satisfaction and well-being over retirement transition, and a negative relationship between need frustration and well-being.

In line with hypothesis two, participants with higher levels of need satisfaction reported greater levels of well-being ($B = .41$, $SE = .09$, $p < .001$). Contrary to the hypothesis, participants with higher levels of need frustration ($B = -.09$, $SE = .08$, $p = .28$) did not report lower well-being.

An additional analysis was conducted to examine the independent effects of each basic need satisfaction and frustration on well-being (Appendix 6.F). At the between-person level, participants with higher levels of autonomy satisfaction reported greater levels of well-being ($B = .95$, $SE = .24$, $p < .001$). However, relatedness and competence satisfaction/frustration did not have any significant effects on well-being. There were no significant associations between each need and well-being at the within-person level.

2.3.3 Loneliness and Social Networking

Hypothesis 3: Social networking would be lowest at the start of retirement (first month) and would subsequently increase up to 12 months after retirement.

Hypothesis 4: Feelings of loneliness would be greatest at the start of retirement (first 3 months) and would subsequently decrease up to 12 months after retirement.

Mean plots for loneliness and social networking at each data collection point were built (Figure 2.2). As hypothesised, there was a reduction in social networking, and an

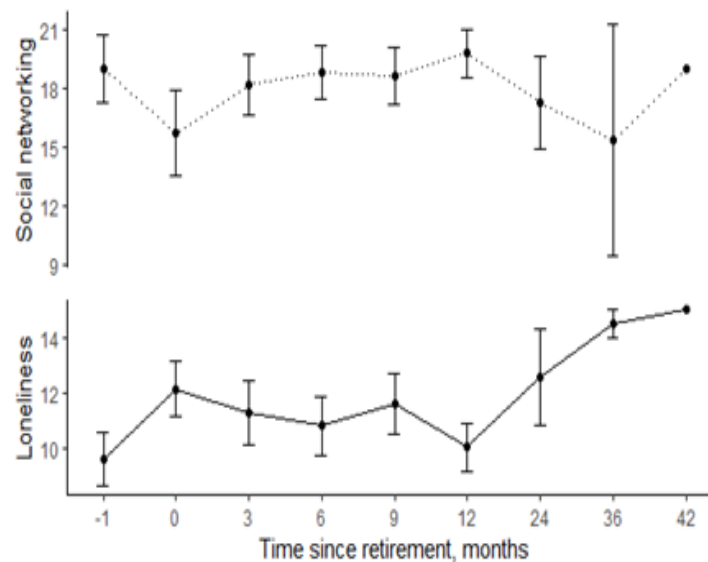
increase in loneliness within the first month of retirement. Importantly, this potentially harmful change following retirement was associated with a subsequent positive change three months post retirement (increased social networking and reduced loneliness). However, in the subsequent months of retirement all the three trajectories fluctuated. Expectedly, social networking had a similar trend for most measurement occasions, whereas loneliness demonstrated a reversed trend.

As loneliness and social networking scores did not follow a normal distribution according to the results from Shapiro-Wilk test, Wilcoxon Rank-Sum tests were performed to compare the medians before retirement, in the first month of retirement and 12 months in retirement (Fogarty, 2018). There was no significant difference between loneliness during employment time ($Mdn = 8$) and during the first month after retirement ($Mdn = 12$), $Z = -1.69$, $p = .09$, $r = .38$. No significant difference was found between social networking during employment time ($Mdn = 17$) and the first month after retirement ($Mdn = 17$), $Z = -.98$, $p = .32$, $r = .22$.

There were no significant differences neither in loneliness between the first month in retirement ($Mdn = 12$) and after 12 months in retirement ($Mdn = 9$), $Z = -1.68$, $p = .09$, $r = .38$, nor in social networking between the first month ($Mdn = 17$) after 12 months in retirement ($Mdn = 21$), $Z = -1.10$, $p = .12$, $r = .25$.

Figure 2.2

Means for social networking and loneliness over the retirement transition



2.3.4 Identities

Hypothesis 5: Participants total identity would decrease throughout the retirement transition period up to 12 months after retirement. The importance of occupational identity would decrease throughout the retirement period, whereas the value of family, leisure activities, and age identities would increase.

A plot that connects the mean scores for overall identities (without the inclusion of retiree dimension) at each data collection point was created (Figure 2.3). There was a drop in the total identity score at the beginning of retirement (T_0). In the subsequent months post-retirement, the trend fluctuated but did not seem to reach the ‘pre-retirement’ level.

Separate mean plots were built for each tested identity dimension – occupational, family, age, and leisure activities (Figure 2.4). Mean occupational identity score demonstrated a decreasing trend over retirement transition, whereas means for family

and age identities increased (Figure 2.4). However, the mean ‘leisure activities’ identity score decreased. It is worth noting that leisure activities, friends, and occupational identity mean scores had a ‘dip’ in their trajectories at the beginning of retirement (T_0).

Wilcoxon Rank-Sum test was performed to compare total identity scores in participants before retirement and 12 months after retirement. There was no significant difference between the scores for employment time ($Mdn = 54$) and 12 months after retirement ($Mdn = 51.5$); $Z = -.50$, $p = .62$, $r = .11$.

There was no significant difference between the occupational identity during employment time ($Mdn = 5$) and 12 months after retirement ($Mdn = 4$); $Z = -.97$, $p = .33$, $r = .22$. No significant difference was found in the family identities between employment time ($Mdn = 5$) and 12 months after retirement ($Mdn = 5$); $Z = -.60$, $p = .55$, $r = .13$. There was no significant difference in age identity during employment time ($Mdn = 2.5$) and 12 months after retirement ($Mdn = 3$); $Z = -.89$, $p = .37$, $r = .20$. However, leisure activities identity score was significantly higher during employment time ($Mdn = 5$) than 12 months after retirement ($Mdn = 5$); $Z = -2.11$, $p < .05$, $r = .47$.

Figure 2.3

Means for total identity score (without ‘retiree’ identity) over retirement transition

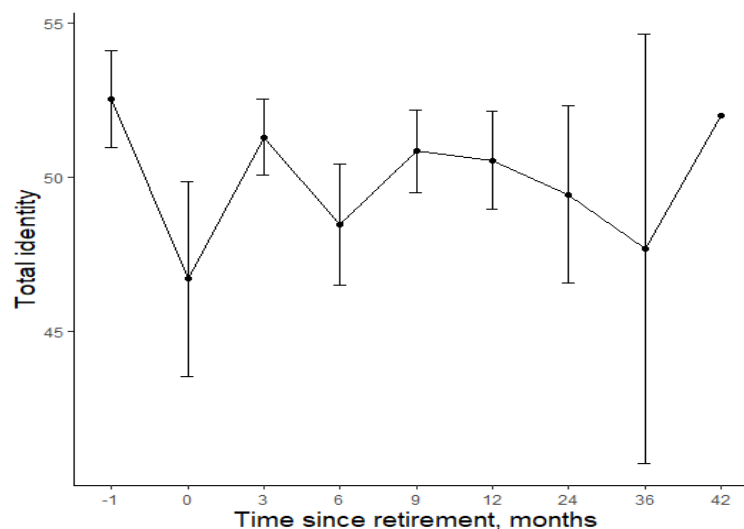
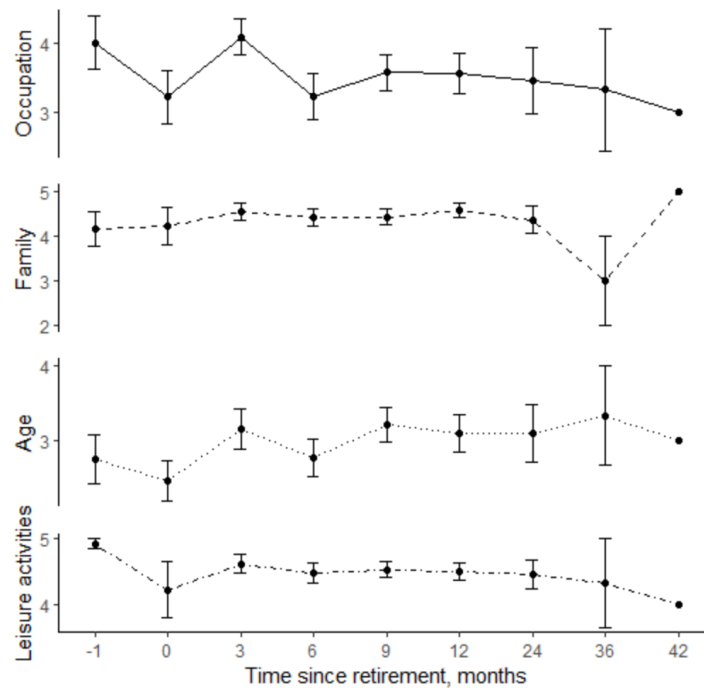


Figure 2.4

Means for occupation, age, family, and leisure activities identity dimensions over retirement transition



2.3.5 Coping Mechanisms

Hypothesis 6: The use of approach coping strategies would be more prevalent than the use of avoidance strategies over retirement transition period. The most common coping strategies would be active coping, emotional support, and planning.

A Wilcoxon Signed-ranks test indicated that approach coping mechanisms were more prevalent than avoidance mechanisms before retirement ($Mdn_{appr} = 35$; $Mdn_{avoid} = 18$; $Z = -2.89$, $p < .05$, $r = .65$) and after retirement ($Mdn_{appr} = 32.5$; $Mdn_{avoid} = 20$; $Z = -7.68$, $p < .001$, $r = 1.72$). Descriptive statistics (Table 2.3) suggested that active coping ($M = 5.79$, $SD = 2.09$) and planning ($M = 5.59$, $SD = 2.12$) could be amongst the most common coping mechanisms. Contrarily, emotional support was not the most prevalent

($M = 4.62$, $SD = 1.71$).² Pairwise Wilcoxon Signed-ranks tests were then used to compare the differences between the use of active coping, planning, and emotional coping. Both planning ($Mdn = 6$, $Z = -5.09$, $p < .001$, $r = 1.06$) and active coping ($Mdn = 6$, $Z = -4.73$, $p < .001$, $r = 1.14$) were more prevalent than emotional support ($Mdn = 4$).

Table 2.3

Means, SDs for coping mechanisms

Coping Strategy	Mean	SD
Approach	31.08	9.30
Active coping	5.59	2.09
Emotional support	4.62	1.71
Informational support	4.41	1.85
Planning	5.59	2.12
Positive reframing	5.31	1.45
Acceptance	5.78	1.88
Avoidance	19.61	4.67
Distraction	4.48	1.86
Denial	2.50	1.01
Substance use	2.57	0.97
Behavioural disengagement	2.38	0.93
Venting	3.75	1.68
Self-blame	3.85	1.45
Humour	4.10	1.85
Religion	2.93	1.50

2.4 Discussion

The aim of the present research, and more broadly of this thesis, is to better understand the retirement experience and propose SDT as an approach to explain the varied

² Multilevel modelling was also applied to evaluate between- and within-person effects of loneliness, social connectedness, total identity score, avoidance and approach coping mechanisms on well-being (Appendix 6.G). However, no significant effects were found.

retirement trajectories (both at the within- and between- person level). The present study examined the changes in need satisfaction/frustration over time and how these might predict changes in well-being over retirement transition. The results partially supported the use of SDT in understanding changes in well-being across retirement, specifically, need satisfaction was associated with greater well-being at the within- and between-person levels. However, need frustration did not predict lower well-being within participants.

The results demonstrated that the importance of leisure activities identity to participants decreased in the first year of retirement. The use of approach coping strategies was more prevalent than avoidance strategies, and active coping and planning were the most common approach mechanisms involved. There was a decreasing trend for social networking and identities in the first month of retirement followed by subsequent increase, whereas for loneliness the reversed trend was observed (increase in the first month followed by subsequent decrease). However, the observed changes for identities, social networking, and loneliness were not significant according to Wilcoxon-Rank sum test.

2.4.1 Need Satisfaction Underpinning Retirement Adjustment

Findings suggest that retirees with higher levels of need satisfaction had higher levels of well-being, and within individuals greater well-being was experienced at time points over retirement transition when need satisfaction was higher. The results added to the evidence on the universal importance of need satisfaction for well-being across different age groups and life events (Deci & Ryan, 2000; Ng et al., 2012; Sheldon, Ryan, & Reis, 1996), specifically across retirement transition. It was important, however, to examine the association between need satisfaction/frustration and well-being during retirement

transition as despite the dynamic nature and significance of retirement as a life event, evidence for this target population is very limited to date (Stenling et al., 2019). To our knowledge, this was the first study that collected data on need satisfaction, frustration, and well-being as frequently as every three months in the first year of retirement. Importantly, results of this study have lent partial support to SDT as a possible explanation behind retirement adjustment satisfaction and have opened opportunities for future exploration on the role of need satisfaction in retirement adjustment.

However, even though need frustration demonstrated an inversed trend to well-being and need satisfaction, there was no significant association found between need frustration and decrease in well-being neither at the between- nor at the within-levels. This contradicts previous research on the deleterious effects of basic psychological need frustration on well-being (Bartholomew, Ntoumanis, Ryan, Bosch, & Thøgersen-Ntoumani, 2011; Costa, Ntoumanis, & Bartholomew, 2015). It is worth noting that levels of need frustration in this study sample were considerably lower than levels of need satisfaction. Participation in research is more likely to attract people with certain personalities such as high extraversion or conscientiousness (Lönnqvist et al., 2007). Both traits might be associated with higher engagement in social activities (Löckenhoff, Terracciano, & Costa, 2009; Mike, Jackson, & Oltmanns, 2014), which can potentially support basic needs of retirees. Experiences of need satisfaction might partly counter the effects of need frustration on well-being (Warburton, Wang, Bartholomew, Tuff, & Bishop, 2019). Furthermore, with lower levels of need frustration, it could be more challenging to detect significant effects on well-being (Kaplan, Chambers, & Glasgow, 2006).

Additional analysis on the association of each basic need and well-being suggested a particularly important role of autonomy in the retirement adjustment at both

the between- and within-levels. Previous studies in the work domain have revealed similar results about the importance of autonomy during retirement transition (Henning, Bjälkebring, et al., 2019). An increasing opportunity to experience freedom of choice in daily activities after retirement might increase autonomy effects on well-being in line with the sensitisation theory (Moller, Deci, & Elliot, 2010). Furthermore, once people are released from the work-related routines and responsibilities, it might become more important to experience autonomy and to be in control of one's own actions. One explanation for non-significant effects of competence and relatedness on well-being might be that most participants were recent retirees who went through the 'honeymoon' stage of freedom from work, social obligations, and stressors associated with work environment (Ekerdt & Koss, 2016). At that early stage, feelings of effectiveness in the environment and connectedness with others can potentially be less relevant in comparison with the experience of autonomy. A deeper understanding of the role of autonomy in retirement adjustment is needed.

2.4.2 Changes in Psychological Predictors over Retirement Transition

The present study evidenced a decrease in well-being, need satisfaction, social networking, total identities score and increase loneliness and need frustration in the first month of retirement. Results of the Wilcoxon Rank-Sum test, however, did not show significant changes in any of the predictors in the first month of retirement. Decrease in the indicators of retirement adjustment in the first month of retirement was expected as a response to the immediate consequences of leaving employment – sudden change of lifestyle and loss of work-related need supportive contexts, social circles, and identities. Notably, there was an observed improvement in the subsequent three months, which could be associated with finding new roles and activities in retirement in line with continuity (Rosow, 1963) and activity theories (Cavan, et al., 1949; Havinghurst &

Albrecht, 1953) and the ability of new contexts to provide need support (Ryan, Patrick, Deci, & Williams, 2008).

Lack of significant findings can be explained by decreased statistical power due to small sample size but also by the characteristics of the participants in the present study, such as access to social resources, prevalent use of approach coping mechanisms, and higher education. To further explore the importance of social support, identities, and understand the role of contextual factors in retirement adjustment, longitudinal studies with bigger sample sizes and qualitative research through the lived experiences of retirees can be beneficial.

Unexpectedly, despite the predicted increase in non-work associated activities (e.g., hobbies and social clubs) after retirement (Henning et al. 2020), the importance of leisure time identity dropped after retirement compare with employment period. One explanation for the decrease in leisure activities after retirement is the socioeconomic and/or health status for some people (Scherger, Nazroo, & Higgs, 2011). Leisure time activities could also lose their value after retirement as there is no comparison to work commitments anymore. Additionally, in pre-retirement period, people can overestimate future levels of activities (Bossé & Ekerdt, 1981), for example due to lack of lifestyle planning (Yeung, 2017), and disappointment with not being able to engage with as many leisure activities as had expected.

Additionally, approach coping mechanisms significantly prevailed during pre-retirement and after retirement, which is in line with existing evidence that the use of adaptive strategies increases with age (Aldwin, Sutton, Chiara, G., & Spiro, 1996; Chen et al., 2018). Previous research has indicated that planning and active coping were the most common coping strategies, as planning facilitates retirement adjustment and can be

used to inform retirement interventions (Yeung, 2017). However, it is worth noting that the majority of participant had received a higher education or equivalent. Higher levels of education can have positive effects on ability to cope with life stressors (Bengtsson & Datta Gupta, 2017), therefore results in current study might not be representative for people with lower education level.

2.4.3 Strengths, Limitations, and Future Directions

A strength of this study was applying a longitudinal design for tracking psychological changes over retirement transition, which allowed to account for intraindividual changes in the observed variables. Recently, a similar piece of research examined annual changes in need satisfaction over retirement transition (Henning et al., 2019; Stenling et al., 2020), however the present work was the first with multiple measurement occasions during the first year of retirement, to observe dynamic changes at the beginning of retirement (Sliwinski, Hoffman, & Hofer, 2010; Neubauer et al., 2017). Another novelty of the current study was measuring need frustration in addition to need satisfaction, particularly since it was suggested that need satisfaction and frustration can have ‘asymmetrical’ effects on well-being and mitigate the effects of each other (Warburton et al., 2020).

One of the challenges of the present study was participant recruitment. A small sample size can reduce the likelihood of detecting statistically significant results (Button et al., 2013). Although, as previously discussed, multilevel modelling can be applied for even smaller samples at level-2, the validity of estimated *p*-values should be interpreted with precaution (McNeish & Stapleton, 2016). There were also missing responses and delays with returning completed questionnaires, which reduced the number of

observations for some participants and subsequently made inferences about longitudinal processes more problematic (Hoyle & Gottfredson, 2015).

Additionally, the focus of multilevel analysis in the present study was mainly on the effects of need satisfaction and frustration on well-being. Adding more predictors (i.e., loneliness, total identity, coping strategies) in the model contributed to a better fit, however no significant associations were identified. Nonetheless, more predictor variables in multilevel models can cause more estimation problems and decreased statistical power (Hoyle & Gottfredson, 2015). Furthermore, with more missing responses, more cases excluded from the analysis could have exacerbated the problem of an already underpowered sample size.

Importantly, preliminary findings in this study confirm the need for future investigation of retirement adjustment and its predictors. In particular, longitudinal studies with bigger sample sizes should be applied to measure the effects of each basic need satisfaction and frustration on retirement adjustment. Furthermore, considering changes in need importance in later life (Neubauer et al., 2017), it is recommended to measure the subjective importance of each need among individuals in the retirement transition. As retirement is often a long-term journey accompanied by various changes, longer follow-ups after retirement (e.g., 5-10 years) can also be beneficial for future research. Additionally, this quantitative study only assessed several predictors of retirement adjustment, however retirement experiences are influenced by complex interplay between various contextual and individual factors. As such, qualitative approach could be beneficial for more comprehensive investigation of retirement adjustment.

Next, need satisfaction is influenced by various factors in social environments. Life-course perspective suggests that different life spheres (e.g., family, hobbies) are important for retirement adjustment because they provide retirees with new salient identities and opportunities to engage in meaningful (and need satisfying) activities (Hutchison, 2018). Future research should explore the mediating roles of need satisfaction between the effects of new retirement contexts, roles, activities and retirement adjustment. Such research might have important future implications for predicting potential benefits and risks of new environments for retirees' well-being. Furthermore, as it was noted earlier, personalities might affect the engagement with contexts that can support basic needs after retirement (e.g., social activities research), and therefore be of interest for future studies on retirement adjustment.

Current work used self-reported measure of psychological well-being as a predictor of retirement adjustment. Future research should explore other indicators of well-being including more objective measurements, for example clinical assessment of cognitive and physical health among retirees to further our understanding of the association between need satisfaction and well-being across the retirement transition.

Additionally, the present study applied frequentist analysis, and at present, significance testing remains the dominant framework for quantitative data analysis in social science. One main feature of frequentist analysis includes assessing significance through calculating p -value, which depends on sampling distribution and sample size. However, the alternative Bayesian approach has received increasing attention in the field of psychology in recent years (Etz & Vandekerckhove, 2018). Unlike the frequentist approach, the Bayesian approach does not rely on sampling distributions of data. Considering challenges with participant recruitment in this population, future research

on the role of need satisfaction in retirement adjustment could utilise the Bayesian approach in data analysis.

2.4.4 Implications

Despite the non-significant findings, some participants in the present study demonstrated descending trajectories for well-being and need satisfaction and increased need frustration (Appendix 6.E), which adds to the current evidence on the need and acceptability to intervene during retirement transition in order to support at least more vulnerable individuals (Heaven et al., 2015). The results also suggested that need satisfaction may underpin changes in well-being among individuals in retirement transition, which can be used to inform interventions that aim at the target population. In particular, future initiatives for recent retirees or those approaching retirement should consider providing need supportive contexts to facilitate initiating and maintenance of new activities and behaviours but also support well-being. For example, intervention developers and implementors can support an informed choice and flexibility (i.e., autonomy support), social component, communication, and bonding (i.e., relatedness support), developing plan and setting goals (competence support) (Ryan & Deci, 2000).

Additionally, planning was one of the most used coping approaches among the participants. Given the recent evidence on the benefits of social and health planning for retirement adjustment (Yeung, 2013; Yeung, 2017), inclination to use planning by the target population suggests the potential for lifestyle planning interventions in retirement.

2.4.5 Conclusions

To conclude, the present study proposed an SDT-informed mechanism behind retirement adjustment. The study applied a longitudinal design and tracked changes in psychological predictors of retirement adjustment pre- and post-retirement. Results

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confirmed that need satisfaction predicts greater well-being at the between- and within-individual levels. The results did not find significant changes in the most tested psychological predictors of retirement adjustment (i.e., social networking, loneliness, identities) over retirement transition. However, approach coping mechanisms significantly prevailed before and after retirement with active coping and planning being the most prevailed strategies. Findings added to the proposition that SDT can be used as an underlying framework to explain retirement adjustment. Additionally, the results have partially supported previous research that retirement transition can be a challenging time for some individuals, which can be potentially used as a ‘window of opportunity’ for health promotion initiatives.

Chapter 2 Summary

Results of chapter 2 demonstrated that changes in need satisfaction can partially explain differences in well-being between individuals and changes in well-being over retirement transition within individuals. Therefore, the findings added to the knowledge on the universal importance of need satisfaction for well-being across different population groups and possibility of using an SDT informed mechanism for retirement adjustment. This can be particularly important in order to support retirement adjustment through the provision of need supportive activities.

The study also evidenced a variety of trajectories for changes in well-being, need satisfaction and frustration over retirement transition. One possible reason for the differences was that some participants were more likely to engage with need supportive activities than others. Individual differences might affect engagement with need supportive experiences and feelings of need satisfaction in various contexts. For example, it was previously noted that some personality traits are more likely to predict participation in social activities (Mike, et al., 2014), which can support basic needs and facilitate retirement adjustment. The next chapter will explore how personalities can affect retirement experiences through the differences in interpreting various contexts as need supportive or thwarting and behavioural responses to these contexts.

Chapter 3

Effects of Personality on Retirement Adjustment through the Differences in Perception of and Responses to Need Support and Thwarting

3.1 Introduction

Life expectancy has increased globally, as such more people are approaching retirement age and experience longer periods of retirement (Bloom, Canning, & Moore, 2014; United Nations Population Fund, 2012). As a result, research examining the retirement process has become a growing priority to support individuals who are retiring and ensure healthier and more fulfilling later life experiences (Government Office for Science, 2016). In an attempt to understand what contributes to well-being in retirement, research has examined a range of factors, for example, the effects of financial preparations (Lusardi, 2019; Wang & Shultz, 2010), sociodemographic characteristics (e.g., Gayman, Pai, Kail, & Taylor, 2013; McFall et al., 2015) and lifestyle (Barnett, van Sluijs, & Ogilvie, 2012; Lund, Iversen, & Poulsen, 2001) on health and well-being in retirement.

Despite the breadth of findings from the retirement adjustment literature, less is known about the effects of psychological factors, such as mechanisms of identity bridging, role of personal relationships (Amabile, 2019; Wang, Hall, & Waters, 2014), and influence of personality in retirement adjustment (Kesavayuth, Rosenman, & Zikos,

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Elements of this research were presented at 7th International Self-Determination Theory Conference, Egmond aan Zee, Netherlands, May 2019.

2016). The sparsity in research examining individual differences in retirement adaptation is particularly notable. It is posited that enhancing our understanding of individual differences in the retirement journey is an important research direction due to the significant role that individual differences have in other life transitions/events. For example, personality might affect our ability to cope with life stresses (e.g., emotional appraisals, selecting and using effective coping mechanisms; Parkes & Hughes, 2017), life transitions such as marital outcomes (Kelly & Conley, 1987), career choice (Page, Bruch, & Haase, 2008), community relocation (Kling, Ryff, Love, & Essex, 2003), and widowhood (Utz, Carr, Nesse, & Wortman, 2002).

3.1.1 Personality Traits and Retirement Adjustment

One individual difference variable that requires further examination in relation to well-being in retirement is personality. Personality consists of traits, which are described as consistent and enduring characteristics or attributes that underlie many individual differences in cognition, emotion, and behaviour (Costa & McCrae, 1988). One of the most widely used models in personality research and applied psychology is the big-five personality taxonomy developed by Costa and McCrae (1988, 1992). The model represents five personality traits: openness, conscientiousness, extraversion, agreeableness, and neuroticism. Briefly, openness refers to a positive appraisal of new experiences connected with imagination and broad interests. Extraversion refers to a tendency to be emotionally expressive, to seek company of others, and external stimulation. Traits of agreeableness are associated with being trusting, straightforward, cooperative, and accommodating. Conscientiousness is characterised by an ability to demonstrate self-discipline, achievement motivation, and persistence in planned behaviours. Finally, neuroticism is related to emotional instability and a tendency to experience anxiety, self-doubt, and aggressive hostility (Costa & MacCrae, 1992).

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Reis and Gold (1993) argued that personality traits might play an important role in predicting individuals coping with new environments and shaping post-retirement lifestyle. In particular, the researchers posited that higher levels of neuroticism would be associated with a lack in retirement preparation and structuring in retirement resulting in more negative emotions and maladaptive behaviours in retirement. Contrary, extraversion, openness, and conscientiousness were theorised to be related to more positive retirement adjustment, as extraversion could be associated with an enhanced ability to establish and maintain social networks, whilst higher levels of openness might increase the opportunity to engage in new satisfying activities, and conscientiousness might be related to greater retirement preparations.

More recently research has empirically tested the propositions suggested by Reis and Gold (1993) and evidenced that personality traits have influenced retirement timing (Blekesaune & Skirbekk, 2012), retirement anxiety (Gana et al., 2009), and quality of retirement (Robinson, Demetre, & Corney, 2010; Serrat, Villar, Pratt, & Stukas, 2017). However, the current evidence lacks depth and clarity as evidenced by the mixed findings. In line with Reis and Gold's (1993) proposition, several studies have reported that traits of conscientiousness and agreeableness are associated with greater life satisfaction and more enjoyable experiences of retirement, whereas neuroticism was linked to lower levels (Löckenhoff, Terracciano, & Costa, 2009; Serrat et al., 2017). In contrast, Kesavayuth and colleagues (2016) evidenced positive effects of high agreeableness and low conscientiousness on life satisfaction among retired women, but no effects of personality were evidenced in retired men. The positive effects associated with low conscientiousness are in direct conflict with the theorisations of Reis and Gold (1993). As such, research examining personality traits and retirement adjustment is inconsistent and requires further examination.

One possible reason for the mixed results is the lack of an explained mechanism by which personality traits might affect retirement adjustment (Wang, Henkens, & Van Solinge, 2011). Some evidence suggests that additional variables such as health behaviours (e.g., Caspi, Roberts, & Shiner, 2005) or relationship quality (Donnellan, Larsen-Rife, & Conger, 2005) might mediate effects of personality on well-being during life transitions. However, existing research on retirement has predominantly focused on simple associations between personality traits and retirement quality as opposed to underlying psychological mechanisms (Hansson, Henning, et al., 2019). As such, a greater understanding of how personality traits affect retirement adjustment and the potential moderators and mediators is needed.

In this chapter, a mechanism by which personality traits might influence retirement experience is proposed. Central to this novel proposition is that personality traits alter 1) how we interpret our environment, and 2) our subsequent behavioural response. This varied interpretation of the environment is particularly pertinent for those experiencing retirement due to the need to adapt to numerous new environments, situations, and experiences. One theory that can support our understanding of not only individual differences, but how the social environment can affect well-being and behaviour is self-determination theory (SDT; Deci & Ryan, 1987, 2000). The subsequent introduction will provide a detailed overview of the mechanism by which personality traits might influence perceptions of new environments, subsequent behavioural responses, and psychological health.

3.1.2 SDT, Personality Traits and Perception of the Environment

In accordance with SDT, every individual has three basic psychological needs for autonomy, relatedness, and competence that when satisfied are associated with

psychological health, well-being, and intrinsic motivation, in contrast, psychological need thwarting leads to extrinsic motivation for behaviours and ill-being (Deci & Ryan, 2000). A fundamental principle of SDT is that the basic psychological needs are universally important, and so need support and need thwarting have similar effects on all individuals in terms of motivation, behavioural engagement, and psychological well-being (Deci & Ryan, 2000). Of importance within SDT is the impact that the social environment has in either facilitating or thwarting people's basic psychological needs, perceived sense of self-direction, performance, and well-being (Legault, 2017). More recent evidence has also suggested that basic needs can also play the role of internal motives that direct people's behaviours and affect well-being outcomes (Sheldon & Gunz, 2009).

In considering the cruciality of basic needs for psychological health, Sheldon and Gunz (2009) suggested the needs-as-motives principle - the felt deficit in autonomy, competence, or relatedness should provoke a desire to satisfy the missing needs and corresponding actions. Sheldon and Gunz also theorised that individual differences might moderate the needs-as-motives effects and affect pursuit of the basic psychological needs. For example, extraverts might have the same need for relatedness as introverts but they might be more sensitive in recognising the deficits in relatedness and have a greater ability to make new acquaintances in order to satisfy the deprived need. Similarly, high traits of conscientiousness might predict a better ability to recognise and compensate autonomy thwarting.

Research has suggested that the universal importance of the basic psychological needs is not inconsistent with the acknowledging the crucial role of personality dimensions in the magnitude of feelings and behavioural responses to need support and thwarting. Mabbe, Soenens, Vansteenkiste, and Van Leeuwen (2016) evidenced the

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protective role of agreeableness in adolescents against the adverse effects of psychologically controlling parental behaviours. Specifically, highly agreeable adolescents demonstrated more adaptive behaviours and did not act against the external environments as a response to the experience of pressure (autonomy thwarting) at home. Mabbe and colleagues (2016) also noted an important limitation in SDT's propositions, that is despite earlier SDT theorising acknowledged the existence of 'intertwined' responses to prolonged need support such as increased ability to recognise and benefit from need satisfying experiences (Deci & Ryan, 2000), no explanation on when, how, and why individuals might respond differently was provided.

With respect to the reasons why personality might alter the responses to need thwarting or support differently, SDT suggests that variations in the interpretation of a context is related to the functional significance, that is the psychological meaning attached to the event. It is posited that an individual's perception of an event is an active construction determined by contextual and personal factors that in turn influences their behaviour (Deci & Ryan, 1987). The role of personality in predicting differences in response to need support and thwarting can also be explained by other psychological theories. In particular, Belsky's differential susceptibility hypothesis (1997) suggests that certain genetic or biological traits make some individuals more susceptible to environmental stressors, which predicts negative behavioural outcomes in unfavourable environments, but better outcomes in supportive environments, when compared to less susceptible individuals. Related to SDT, this would suggest that some individuals would be more sensitive in noticing and perceiving environmental cues as valenced in some way (i.e., thwarting or supportive), resulting in exacerbated behavioural outcomes.

There is emerging evidence on how specific traits might predict a range of outcomes in the response to need thwarting or support, for example the role of

Chapter 3. Effects of Personality on Retirement adjustment through the Differences in Perception of and Responses to Need Support and Thwarting

agreeableness (Mabbe et al., 2016), benevolence, conscientiousness, extraversion, and emotional stability (Van Leeuwen, Mervielde, Braet, & Bosmers, 2004) in response to negative parenting, and protective effects of mindfulness against the non-autonomy supportive work environment (Schultz, Ryan, Niemiec, Legate, & Williams, 2015). In terms of the mechanisms underpinning these effects, the authors emphasise both perceptual and behavioural processes. Both mechanisms can be illustrated with the example of the moderating effects of agreeableness in children against controlling parental style (Mabbe et al., 2016). Children with higher levels of agreeableness are less likely to perceive their controlling parent as intrusive (perception) but also are more likely to use more adaptive coping strategies such as negotiation with the parent (a behavioural process) (Skinner, Edge, Altman, & Sherwood, 2003).

Other researchers focused more on the perceptual mechanism underlying the influence of personality. In particular, Schultz et al. (2015) suggested that mindfulness can buffer the effects of a non-autonomy supportive work environment due to an ability of a mindful individual to see criticism in a more constructive and non-threatening manner, thus advocating the importance of the perceptual pathway. Contrarily, other evidence suggests the dominance of the behavioural pathway. Van Leeuwen and colleagues (2004) reported that in response to controlling parenting, children low in benevolence and conscientiousness are more likely to externalise their behaviour (aggression, hyperactivity, and delinquency), whilst those low in emotional stability and extraversion are more likely to internalise behaviour (somatic complaints, social withdrawal, and anxiety/depression) in comparison to more resilient children.

3.1.3 Mechanism Underpinning the Effects of Personality in Retirement Adjustment

How personality traits may alter sensitivity to recognise the environment as need supportive or thwarting and/or subsequent behaviours (need seeking or need avoiding) indicates a mechanism through which personality traits predict different outcomes in the retirement context. For example, extraverts would not view post-retirement changes in their social circle as a threat to their relatedness satisfaction but as an exciting opportunity to meet new people, whereas individuals low in extraversion might perceive the new environment as relatedness thwarting and anxiety inducing (Charles & Carstensen, 2010). Moreover, personality traits might predict retirement adjustment through the behaviours in response to new challenges. Recently retired adults high in conscientiousness might try to maximise the benefits of increased spare time by engaging with new exercise programmes or clubs, whilst those low in conscientiousness might feel lost in response to a sudden increase in autonomy or occupy all their free time with less dynamic activities such as watching TV.

In sum, there is a nascent body of research to suggest that personality dimensions predict outcomes to need thwarting and need supporting environment and can explain individual differences in retirement adjustment (Hansson, Henning, et al., 2019; Robinson et al., 2010; Serrat et al., 2017). Yet, further research is called for to clarify how and which mechanisms (perceptual, behavioural, or both) are dominant in driving the effects of personality on exposure to need supportive/thwarting stimuli.

3.1.4 Effects of Narcissism

In addition to the big five personality traits, one personality that warrants further examination with respect to retirement adjustment is narcissism (Carter & Douglass, 2018). Two types of narcissism exist, overt (grandiose) and covert (vulnerable;

Dickinson & Pincus, 2003; Gabbard, 2009; Wink, 1991). Individuals with both forms tend to maintain self-esteem through the admiration of other people (Dickinson & Pincus, 2003, Wink, 1991). However, overt narcissism is typically characterised with a positive, inflated view of the self, arrogance, externalising behaviours, aggressiveness, and grandiosity (Ronningstam, 2009), whereas covert narcissists are displayed with internalised behaviours, vulnerability, hypersensitivity, and deflated self-esteem (Gabbard, 2009; Wink, 1991).

Despite that sub-clinical narcissism is considered to be a ‘maladaptive’ trait (Freud, 1914; Kernberg, 1975; Washburn, McMahon, King, Reinecke, & Silver, 2004), which has negative effects on maintaining relationships (Campbell, Bush, Brunell, & Shelton, 2005; Rauthmann, 2012), recent evidence demonstrated that narcissism can be a protective factor in mental health amongst older adults, specifically against loneliness (Carter & Douglass, 2018). As narcissism is associated with multiple reasons to seek social interaction (Holtzman, Vazire, & Mehl, 2010) and social support (Jonason & Schmitt, 2012), be it for attention- or admiration-seeking purpose, traits of narcissism might offset loneliness, stress, and other negative mental states in older age (Carter & Douglass, 2018). However, the suggestion that narcissism can prevent loneliness in later life might not necessarily apply to both overt and covert forms of narcissism. While overt narcissism is typically associated with more externalised types of behaviour (Ronningstam, 2009), covert narcissism is related to social inhibition and avoiding socialising as a way to guard against disapproval and rejection (Given-Wilson, McIlwain, & Warburton, 2011). Thus, although there is no evidence on the effects of covert narcissism in retirement adjustment, it can be suggested that covert narcissism might predict negative outcomes such as social avoidance or disengagement in the response to decreased social network.

Additionally, narcissistic personalities have recently received increasing attention from the SDT community (e.g., Ryan, Soenes, & Vansteenkiste, 2019; Skedikides, Ntoumanis, & Sheldon, 2019). Firstly, the rise of narcissism at the societal level (Skedikides et al., 2019) makes further exploration of its emergence and effects of great interest. Furthermore, narcissistic personalities involve distorted cognitions and beliefs about the self and others, feasibly altering both individuals' perception of and response to their environment, for example response to social rejection and negative feedback (Cascio, Konrath, & Falk, 2015; Matsuo & DeSouza, 2016). Moreover, the development of narcissistic traits is thought to be attributable to inappropriate parenting and societal pressures (Horton, 2011; Twenge & Campbell, 2009). From the SDT perspective, this can be viewed as impairments in the degree to which needs are met during important developmental years. As such, narcissistic traits might serve as a compensatory behaviour that conceals underlying feelings of inferiority, low self-esteem, and need frustration. Needs then may be devalued in favour of compensatory satisfaction, the mechanism that remain in later life. Despite that evidence suggests narcissism might decrease with age (Foster, Campbell, & Twenge, 2003), the effects of the trait on the individuals' perception of themselves and others and responses to the environment remain the same in later life (Carter & Douglass, 2018).

3.1.5 Summary and Research Questions

The main aim of the present research was to examine whether sensitivity to and responses to need supportive and thwarting events in retirement context varied as a function of personality. To test a sensitivity mechanism, direct associations between personality dimensions and reported need satisfaction and frustration (following exposure to a standardised event) were hypothesised. Specific hypotheses are as follows:

- 1) Need satisfaction would be significantly predicted by traits of extraversion, conscientiousness, overt narcissism (positively), and neuroticism and covert narcissism (negatively). Extraversion, conscientiousness, and overt narcissism were expected to enhance sensitivity to recognising positive experiences. Neuroticism and covert narcissism were anticipated to reduce sensitivity to recognising positive experiences.
- 2) Contrary, need frustration would be significantly predicted by traits of neuroticism and covert narcissism (positively), and extraversion and conscientiousness (negatively). Neuroticism and covert narcissism were expected to exacerbate sensitivity to recognising negative experiences, whereas extraversion and conscientiousness would reduce the perceived thwarting nature of situations.

To test a behavioural mechanism, it was proposed that personality would moderate the relationships between felt need satisfaction and need frustration, and subsequent planning of need seeking or need avoiding behaviour. Specifically:

- 3) Conscientiousness, openness, and overt narcissism would enhance behavioural responses, and neuroticism and covert narcissism would undermine behavioural responses to need frustration and satisfaction. Specifically, as frustration increases or satisfaction decreases, conscientiousness, openness, and overt narcissism would predict greater need seeking and reduced need avoidance, whereas neuroticism and covert narcissism would predict the opposite (i.e., decreased need seeking and increased need avoidance).

3.2 Method

3.2.1 Participants

An opportunistic sample of one hundred and seventeen retired adults ($M_{\text{age}} = 66.28$, $SD = 6.15$, Male = 49, $M_{\text{years retired}} = 7.40$, $SD = 5.76$) took part in the study. Inclusion criteria

required participants to be fluent in written and spoken English and retired from employment. Following departmental ethical approval, all participants provided informed consent prior to completing the study. Two participants omitted vignette responses and were removed from analysis.

3.2.2 Design Rationale

The present study adopted the vignettes methodology. According to Atzmuller and Steiner (2010) a vignette presents “a short, carefully constructed description of a person, object, or situation, representing a systematic combination of characteristics” (p. 128). Vignette-based experimental design allows specific manipulation of aspects of a written scenario and offers an opportunity to capture individuals’ thoughts, feelings, and behaviours affected by different contextual factors. Some of the factors are not necessarily easily accessible in real-life situations because of confounding variables (Evans et al., 2015), therefore vignettes can be particularly useful for exploring complex multidimensional processes such as retirement. The design of the vignettes has been informed by a combination of the existing literature, researchers’ personal and professional experiences, and case studies (Hughes & Huby, 2004).

When constructing a vignette, it is important to consider internal validity, which refers to the extent to which a vignette captures the investigated research topics (Gould, 1996; Flaskerud, 1979). Flaskerud (1979) suggested that in order to establish internal validity, professionals may assess the extent to which vignettes are representative of scenarios relevant to the participants and research topics. Therefore, in the present study, the designed vignettes and response items were critiqued by three SDT experts for their clarity, fit with SDT concepts, and appropriateness for the task context. Additionally, a limitation which is often associated with the vignettes methodology is the lack of external and construct validity, in particular the ability of vignettes to simulate aspects of real-

world scenarios and produce results that generalise to situations encountered by participants and others like them (Evans et al., 2015). In an attempt to overcome this problem, the vignette scenarios were designed with relevance to retired adults (Aguinis, & Bradley, 2014), and described situations were based on the retirement literature (e.g., Hatch, 2018).

3.2.3 Research Task

Six SDT-informed vignettes were developed for the study (see Appendix 6.H). Each vignette systematically described a need supportive or thwarting experience in a context relevant to retired adults. Participants responded to each vignette on a 1 (*Not at all*) to 7 (*Very strongly*) Likert-scale regarding their felt need satisfaction (e.g., “*cared for by family and friends*” [need satisfaction], “*feeling insecure in my abilities to do all those activities*” [need frustration]) and subsequent planned need orientated behaviour (e.g., “*find ways to prove to myself that I am able to adapt a new life successfully*” [need seeking], “*avoid contact with others*” [need avoidance]).

Response items for the vignettes were adapted from existing measurements of psychological need satisfaction and frustration for application to the vignette, including Balanced Measure of Psychological Needs- General (Sheldon & Hilpert, 2012), Basic Psychological Needs Satisfaction and Frustration Scale (Chen et al., 2015), and Psychological Need Thwarting Scale (Bartholomew, Ntounmanis, Ryan, & Thogersen-Ntoumani, 2011).

3.2.4 Measures

Big Five Inventory-10 (BFI-10; Rammstedt & John, 2007; see Appendix 6.H), a 10-item short form of the Big Five Inventory (John, Donahue, & Kentle, 1991) was used to assess extraversion, agreeableness, conscientiousness, neuroticism, and openness. Participants

responded to the stem “*I see myself as someone who...*” on a 1 (*Disagree Strongly*) to 5 (*Agree Strongly*) Likert-scale. On average, the BFI-10 scales predicted 70% of the full BFI variance, and demonstrated acceptable test-retest correlations ($r = .72$). The scale has demonstrated external and internal validity. It has also been recommended to use BFI-10 as an efficient tool in online surveys with a large set of questions where participants tend to lose interest quickly (Guido, Peluso, Capestro, & Miglietta, 2015; Rammstedt & John, 2007).

The *16-item Narcissistic Personality Inventory* (NPI-16; Ames, Rose, & Anderson, 2006; see Appendix 6.H) is a short version of the 40-item NPI-40 (Raskin & Hall, 1979) assessing grandiose forms of subclinical narcissism. The NPI-16 demonstrates acceptable internal consistency (Cronbach’s $\alpha = .72$) and a large positive correlation with the full scale ($r = .90$). The NPI-16 uses a forced-choice format with a narcissistic and non-narcissistic response for each item (e.g., “*I like having authority over people*” as opposite to “*I don’t mind following orders*”).

Hypersensitive Narcissism Scale (HSNS; Hendin & Cheek, 1997; see Appendix 6.H) is a 10-item scale measuring the covert aspect of narcissism (e.g., “*I easily become wrapped up in my own interests and forget the existence of others*”). Participants responded to each item on a 1- (*Very uncharacteristic or untrue, strongly disagree*) to 5-point (*Very characteristic or true, strongly agree*) Likert scale. The HSNS has demonstrated adequate internal consistency in adult, nonclinical samples (Cronbach’s $\alpha > .70$; Hendin & Cheek, 1997; Fossati, Borroni, Grazioli, & Cheek, 2009).

3.2.5 Procedure

Participants completed the questionnaires and questions to the six SDT-informed vignette scenarios. The self-report personality measures and vignettes were presented to participants in a counter-balanced order; 62 participants completed personality measures

followed by vignettes, whilst 55 participants completed vignettes followed by personality measures. Participants had a choice to complete the study online ($n = 105$) or hard-copy received by post ($n = 12$).

Before completing the task, participants were required to read the participant information sheet (see Appendix 6.I), which contained the study information and contact details for the research team. Those who chose to take part via hard copy resources first signed a consent form (see Appendix 6.J) and then completed the questionnaire pack (see Appendix 6.H). For participants who completed the online version, the participant information sheet was located on the first page of the survey. Participants were able to complete the questionnaire only if they ticked all the boxes indicating consent and provided their electronic signature in the consent form. At the end of the questionnaire, participants read the participant debrief sheet (see Appendix 6.K).

3.2.6 Data Analysis

Multiple linear regression analysis was conducted to explore the associations between personality traits and need satisfaction, need frustration, need avoidance, and need seeking behaviours.

To test whether personality traits moderated the effects of need satisfaction and frustration on need avoidance or need seeking behaviours, moderated hierarchical regressions were conducted. Need satisfaction or frustration were entered as independent variables and the relevant personality traits were entered as moderators. All independent variables were standardised and centred prior to computing the product terms in accordance with Jaccard, Turisi, and Wan (1990). Jaccard et al. (1990) recommend that variables are standardised in order that they possess common metric, making it easier to

form conclusions regarding the magnitude of the coefficients for different independent variables. All hypotheses were tested against a significance level of $p < 0.05$.

Post hoc power analyses were conducted for a regression analysis using the recruited sample size ($N = 117$), achieved effect sizes and alpha levels are reported below. The post hoc analyses revealed adequate statistical power for each analysis conducted (power exceeding .98 for each analysis). One exception to this was the power achieved for hypothesis two (.71).

3.3. Results

Descriptive statistics including means, standard deviations, and Pearson's correlations for personality traits, need perception and need seeking behaviours are shown in Table 3.1. At the bivariate level, strong significant correlations were observed between both extraversion and conscientiousness and need satisfaction. Both extraversion and conscientiousness were also related to need frustration. With regards to need seeking and avoidance behaviours, need satisfaction was strongly associated with greater need seeking and less need avoidance, with the reverse pattern observed for need frustration (i.e., greater need avoidance, and less need seeking), as would be predicted by SDT.

Table 3.1

Means, SDs and intercorrelations among the variables

	Mean	SD	NS	NF	E	A	C	N	O	ON	CN	NS
NS	98.36	12.16	-									
NF	46.26	14.9	-.470**	-								
E	6.93	2.19	.471**	-.383**	-							
A	7.37	1.88	.193*	-0.142	0.09	-						
C	8.17	1.79	.290**	-.235*	0.144	.269**	-					
N	4.97	1.99	-.273**	0.155	-.357**	-0.079	-0.112	-				
O	7.2	1.79	-0.046	-0.012	0.057	0.006	0.011	0.125	-			
ON	3.03	2.73	0.161	-0.014	.264**	-.208*	.279**	-.274**	-0.041	-		
CN	25.26	6.11	-.249*	.297**	-.228**	-.278**	-.217*	.305**	-0.003	0.071	-	
NSe	102.53	13.64	.678**	-.227*	.326**	.273**	.268**	-0.181	0.029	0.062	-.293**	-
NA	49.17	15.55	-.445**	.695**	-.415**	-.273*	-.326**	0.099	-0.03	-0.111	.342**	-.516**

Note. NS Need satisfaction; NF Need frustration; E Extraversion; A Agreeableness; C Conscientiousness N Neuroticism; O Openness; ON Overt narcissism; CN Covert narcissism; NSe Need seeking; NA Need avoidance. * $p < .05$, ** $p < .002$

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Hypothesis 1: Need satisfaction would be significantly predicted by traits of extraversion, conscientiousness, and overt narcissism (positively) and neuroticism and covert narcissism (negatively).

Analysis: Linear regression was performed with need satisfaction as the dependent variable and personality traits entered in one step as independent variables.

A multiple linear regression revealed that need satisfaction was significantly predicted by the model ($F_{(5, 106)} = 8.692, p < .001$). As hypothesised, extraversion ($t_{(106)} = 4.497, p < .001$) and conscientiousness ($t_{(106)} = 2.345, p = .021$) positively predicted need satisfaction. Contrary to the hypothesis, overt narcissism ($t_{(106)} = -.292, p = .771$) was not a positive predictor, and neither neuroticism ($t_{(106)} = -.830, p = .409$) or covert narcissism ($t_{(106)} = -.930, p = .354$) were negative predictors.

Hypothesis 2: Need frustration would be significantly predicted by traits of neuroticism and covert narcissism (positively) and extraversion and conscientiousness (negatively).

Analysis: Linear regression was performed with need frustration as the dependent variable and personality traits entered in one step as independent variables.

A multiple linear regression revealed that need frustration was significantly predicted by the model ($F_{(4, 108)} = 7.853, p < .001$). As hypothesised, covert narcissism ($t_{(108)} = 2.060, p = .042$) positively predicted need frustration, whereas extraversion ($t_{(108)} = -3.442, p = .001$) and conscientiousness ($t_{(108)} = -2.099, p = .038$) were negative predictors. Contrary to the hypothesis, neuroticism ($t_{(108)} = -.106, p = .916$) did not predict need frustration.

Hypothesis 3: Personality would explain significant variance in need seeking and need avoiding behaviours over and above the effects of satisfaction and frustration.

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Analysis: Linear regression was performed with need seeking/need avoiding as the dependent variable, independent variables included need seeking and need frustration (block 1), followed by personality traits (block 2).

Need seeking was significantly predicted by the model ($F_{(9, 102)} = 12.187, p < .001$). However, personality traits did not add significant additional variance over and above that explained by need satisfaction and frustration ($\Delta r^2 = .050; p = .175$).

Need avoidance was significantly predicted by the model ($F_{(9, 101)} = 14.452, p < .001$). Personality traits added significant additional variance over and above that explained by need satisfaction and frustration ($\Delta r^2 = .079; p = .016$). However, no personality traits were significant predictors.

Exploratory analysis: Moderated hierarchical regressions were conducted with need satisfaction or frustration entered as independent variables and the relevant personality dimensions as moderators. Outcomes were planned need seeking and need avoidance.

Seven out of the 24 interactions were significant (see Table 3.2); standardised beta coefficients are presented. Significant interactions with need frustration emerged for extraversion, covert narcissism and neuroticism on need seeking ($\Delta r^2 = .019, \Delta F = 2.468, p\Delta_F = .019; \Delta r^2 = .109, \Delta F = 15.292, p\Delta_F < .001; \Delta r^2 = .070, \Delta F = 9.010, p\Delta_F = .003$, respectively), no significant interactions with need frustration on need avoidance emerged. Significant interactions with need satisfaction emerged for conscientiousness, extraversion, covert narcissism and neuroticism on need seeking ($\Delta r^2 = .027, \Delta F = 5.888, p\Delta_F = .017; \Delta r^2 = .039, \Delta F = 8.559, p\Delta_F = .004; \Delta r^2 = .045, \Delta F = 10.025, p\Delta_F = .002; \Delta r^2 = .045, \Delta F = 9.977, p\Delta_F = .002$, respectively).

Nature of these interactions is shown in Figures 1-7 (Appendix 6.L) using the regression estimation equation formed from the unstandardised coefficients, in the

manner recommended by Jaccard et al. (1990). Plot points are calculated for hypothetical participants scoring one standard deviation above and below the mean, (labelled high and low respectively), on each of the predictor variables (Cohen & Cohen, 1983).

There was consistency in the form of observed interactions. Specifically, the least healthy outcomes (i.e., lowest need seeking) were predicted by low satisfaction or high frustration *combined with* high neuroticism, high covert narcissism, and low overt narcissism. There was a less marked influence when neuroticism or covert narcissism were low, or when overt narcissism was high, however more need seeking or less need avoidance under unfavourable conditions was still observed.

Table 3.2

Hypothesised interactions between need satisfaction and frustration, and personality on need seeking and avoiding behaviour

DV	Independent Variable	R^2	ΔR^2	$p(F)$	β	$p(\beta)$
Need seeking	Need satisfaction	.459	.459	.000	.634*	.000
	Conscientiousness	.467	.008	.216	.088	.216
	Product	.494	.027*	.017	-.166	.017
Need avoiding	Need satisfaction	.198	.198*	.000	-.374*	.000
	Conscientiousness	.231	.047*	.010	-.227*	.010
	Product	.225	.001	.689	.324	.689
Need seeking	Need frustration	.051	.051*	.015	-.163	.082
	Conscientiousness	.100	.049*	.015	.217*	.022
	Product	.106	.006	.382	.080	.382
Need avoiding	Need frustration	.483	.483*	.000	.667*	.000
	Conscientiousness	.511	.027*	.014	-.183	.009
	Product	.520	.009	.157	-.096	.157
Need seeking	Need satisfaction	.459	.459*	.000	.633*	.000
	Neuroticism	.459	.000	.952	.024	.733
	Product	.504	.045*	.002	.219*	.002
Need avoiding	Need satisfaction	.198	.198*	.000	-.431*	.000
	Neuroticism	.198	.001	.758	-.037	.675
	Product	.209	.011	.231	-.106	.231
Need seeking	Need frustration	.051	.051*	.015	-.167	.065
	Neuroticism	.073	.022	.109	-.138	.124
	Product	.143	.070*	.003	-.267*	.003
Need avoiding	Need frustration	.483	.483*	.000	.695*	.000

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	Neuroticism	.484	.000	.948	-.005	.944
	Product	.484	.000	.886	.010	.886
Need seeking	Need Satisfaction	.459	.459*	.000	.668*	.000
	Openness	.464	.005	.325	.073	.302
	Product	.466	.002	.576	-.041	.576
Need avoiding	Need Satisfaction	.198	.198*	.000	-.459*	.000
	Openness	.198	.000	.930	.012*	.893
	Product	.200	.002	.588	-.049	.588
Need seeking	Need Frustration	.051	.051*	.015	-.236*	.015
	Openness	.052	.001	.774	.022	.816
	Product	.053	.001	.704	-.037	.704
Need avoiding	Need Frustration	.483	.483*	.000	.695*	.000
	Openness	.484	.001	.715	.025	.719
	Product	.484	.000	.994	.001	.994
Need seeking	Need satisfaction	.459	.459*	.000	.689*	.000
	Overt narcissism	.461	.001	.624	-.014	.851
	Product	.470	.009	.163	-.100	.163
Need avoiding	Need satisfaction	.198	.198*	.000	-.440*	.000
	Overt narcissism	.201	.003	.494	-.076	.392
	Product	.207	.006	.256	.081	.356
Need seeking	Need frustration	.051	.051*	.015	-.226*	.016
	Overt narcissism	.055	.004	.520	.065	.486
	Product	.060	.005	.428	.073	.428
Need avoiding	Need frustration	.483	.483*	.000	.692*	.000
	Overt narcissism	.491	.008	.196	-.090	.193
	Product	.491	.000	.817	-.016	.817
Need seeking	Need satisfaction	.456	.456*	.000	.540*	.000
	Covert narcissism	.472	.463	.067	-.168	.018
	Product	.517	.045*	.002	.234*	.002
Need avoiding	Need satisfaction	.230	.230*	.000	-.363*	.000
	Covert narcissism	.283	.053*	.006	.258*	.003
	Product	.297	.014	.150	-.130	.150
Need seeking	Need frustration	.061	.061*	.008	-.070	.423
	Covert narcissism	.114	.053*	.012	-.323*	.001
	Product	.223	.109*	.000	-.349*	.000
Need avoiding	Need frustration	.469	.469*	.000	.615*	.000
	Covert narcissism	.488	.019*	.044	.166*	.027
	Product	.494	.006	.273	.080	.273
Need seeking	Need satisfaction	.459	.459*	.000	.649*	.000
	Ex	.460	.001*	.782	-.006	.933

	Product	.499	.039*	.004	-.202	.004
Need avoiding	Need satisfaction	.198	.198*	.000	-.309*	.001
	Ex	.258	.245*	.003	-.271*	.005
	Product	.261	.003	.508	.056	.508
Need seeking	Need frustration	.051	.051*	.015	-.089	.365
	Ex	.118	.067*	.004	.285*	.004
	Product	.138	.019	.119	.142	.019
Need avoiding	Need frustration	.483	.483*	.000	.627*	.000
	Ex	.506	.023*	.026	-.165*	.026
	Product	.506	.000	.865	-.012	.865

Note. * $p \leq .05$; significant interactions in bold.

3.4 Discussion

3.4.1 Overview

The aim of the thesis is to understand why differences in retirement experiences occur and how certain individual or contextual factors might contribute to it. Self-determination theory has guided the understanding of how different environments affect need satisfaction or thwarting and subsequently individuals' well-being. The emerging evidence (e.g., Mabbe et al., 2016; Sheldon & Gunz, 2009) has suggested that individual factors such as personality might alter the interpretation of new environments/situations and subsequent behaviours, which can potentially explain different responses to retirement contexts. As such, the present study aimed to examine the effects of personality traits on sensitivity and responses to need supportive and thwarting events among retired adults. Both perceptual and behavioural mechanisms were tested. The results partially support the first mechanism, by which certain personality dimensions affect the sensitivity to feeling need satisfaction or thwarting in the response to the environmental stimuli. Extraversion and conscientiousness increased sensitivity to feeling need satisfaction and decreased sensitivity to feeling frustration. In contrast, covert narcissism increased sensitivity to need frustration. However, there was less support for the second pathway, whereby personality alters an individual's reaction to

need satisfaction or frustration in the form of more or less adaptive response planning.

While some significant interactions indicated personality traits influence outcomes more strongly in unfavourable environments, the majority of interactions were non-significant.

3.4.2 Main Findings

Findings suggest that some personality traits affect the likelihood of perceiving the environment as supportive or thwarting. As hypothesised, extraversion and conscientiousness were positively associated with need satisfaction but negatively with need frustration, whereas covert narcissism was positively associated with need frustration. As such, the research provides some empirical support to the SDT proposition that personality dimensions might alter functional significance of the environment/events (Deci & Ryan, 1987; Soenens, Vansteenkiste, & Petegem, 2015). Furthermore, the research suggests a new mechanism to explain why people might have such varied retirement experiences (e.g., Hansson et al., 2019; Henning et al., 2017; Kesavayuth et al., 2016; Löckenhoff, et al., 2010; Serrat, et al., 2017). Differences in the interpretation of new contexts mediate the relationships between personalities and retirement adjustment experiences. Individuals with traits that predict perceiving the environment as need supporting are more likely to interpret their retirement experiences as positive and facilitating to well-being. Contrarily, those who perceive new settings as need thwarting are more likely to experience negative outcomes in their retirement adjustment. To our knowledge, this is the first study that has tested the immediate or ‘acute’ effects of retirement environments on individual’s reactions when previous research focussed more on the remote consequences of interacting with the retirement contexts (e.g., Alvarenga, Kiyan, Bitencourt, & Wanderley, 2009) or used longitudinal designs (e.g., Lindwall et al., 2017; Peeters et al., 2008).

The results also contribute to existing evidence of the protective role of extraversion and conscientiousness in retirement (e.g., higher positive effects experienced while engaging in social activities; Newton, Pladevall-Guyer, Gonzalez, Smith, 2018). Of note, in the current research neuroticism was not associated with an increased sensitivity to need thwarting as has been hypothesised. One explanation for this interesting finding is that the characteristics of neuroticism might decline with age (Donnellan & Lucas, 2008; Soto, John, Gosling, & Potter, 2011), and/or that with age people are better able to engage in effective emotion regulation strategies in stressful situations (Helson & Soto, 2005; Labouvie, Vief, Diehl, Jain, & Zhang, 2007).

Results demonstrated the direct associations between the level of reported need satisfaction/frustration and future planned behaviour. The level of felt need satisfaction was strongly associated with greater need seeking and less need avoidance behaviours, with the reverse pattern observed for need frustration (i.e., greater need avoidance, and less need seeking). Importantly, the potential harmful decision to engage in less need seeking behaviours in response to felt need thwarting contradicts SDT's proposition that people should be motivated to satisfy deprived needs (Deci & Ryan, 2000). Actively avoiding opportunities to satisfy deprived needs might hinder one's ability to achieve balanced need satisfaction (Sheldon & Niemiec, 2006), which might have important applications for retired adults and situations that they might experience. Particularly, some individuals who are at risk of loneliness and isolation as a result of losing connections with their former social circles might even further disengage from social relationships instead of actively seeking those situations/environments. This avoidance might explain why some older adults tend to deal with loneliness privately, endure the loneliness, and cannot articulate their inability to cope (Kharicha, Manthorpe, Iliffe, Davies, & Walters, 2018).

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On the whole, personality did not add to variance in behaviour response planning over and above that can be explained by felt satisfaction or frustration. This suggests that variation in personality traits does not alter how individuals plan to act after experiencing need satisfaction or frustration, supporting universal positive and negative outcomes of satisfaction and frustration, respectively, as proposed by SDT (Deci & Ryan, 2000). As such, it appears that personality predominantly acts through affecting the degree of satisfaction or frustration arising from a thwarting or supportive experience, that is, through altering the functional significance of the event to the individual (Deci & Ryan, 1987).

Therefore, there is not enough evidence to suggest that personality dimensions affect retirement adjustment directly through the behavioural mechanism but through the perceptual pathway, which is aligned with the initial suggestions of Reis and Gold (1993) and recent evidence (Hansson, Henning, et al., 2019). For example, Reis and Gold (1993) proposed that individuals high in extraversion are more likely to view retirement in optimistic terms and therefore have less difficulty in adjusting to a new lifestyle. In contrast, high neuroticism might be associated with a more negative appraisal towards retirement, which might result in maladaptive responses such as lack of preparation or social disengagement. More recent evidence has also demonstrated that personality might account for individual differences in the perception and evaluation of retirement context. For instance, individuals high in neuroticism are more likely to worry about changes accompanying retirement transition (Robinson, 2010) such as their own abilities and resources, which in turn might affect their coping behaviours (Hansson, Henning, et al., 2019).

Additionally, the results suggest that personality effects become stronger in unfavourable conditions. There was a consistent pattern of interaction across different

personality traits and outcomes – personality exacerbates responses when support was low or thwarting high. Furthermore, the nature of these interactions is consistent with the hypothesis, that is, the poorest outcomes (least need seeking and highest need avoidance) occurred at low satisfaction or high frustration combined with high neuroticism, high covert narcissism, low extraversion, and low conscientiousness, whereas better outcomes were predicted when these negative traits were low. This partially contrasts with Sedikides, Ntoumanis, and Sheldon's (2019) theorisation that need deficits would cause individuals with traits of neuroticism and covert narcissism to engage in need satisfying efforts. However, the 'double negative' effects of unfavourable traits are consistent with the previous evidence on how those traits might predict maladaptive reactions in retirement context (e.g., Reis & Gold, 1993; Serrat et al., 2018). For example, Hansson, Henning, and colleagues (2019) suggested that neurotic retirees are more vulnerable in the challenging transition period, as they reported a greater decrease in self-esteem, autonomy, or social support than less neurotic individuals. The loss of work role and associated loss of structure can increase the risk of negative emotions, anxiety, maladaptive behaviours, and poor retirement adjustment among neurotic individuals.

3.4.3 Narcissism-Related Findings

One novelty of the present study was measuring the effects of overt and covert narcissism on the sensitivity and behavioural responses to retirement context. The distorted cognitions and beliefs associated with narcissism seem to alter interpretation of the environment (specifically being need thwarting) and subsequent response planning. In line with previous literature, covert narcissism predicted higher vulnerability to the environmental stressors (Atlas & Them, 2008; Miller, Dir, Gentile, Wilson, Pryor, & Campbell, 2010), which evidenced in higher levels of need frustration and more need

avoidance behaviours in the present study. Contrarily to the initial hypothesis, overt narcissism did not demonstrate positive effects on need satisfaction in the environment and subsequent need seeking behaviour. One explanation can be that the effects of overt narcissism might weaken with age (Battegay & Mullejans, 1992; Foster, Campbell, & Twenge, 2003; Roberts et al., 2010), which is associated with decrease in ego, self-attention, libido, social conventional standards of beauty and social views on ageing (Battegay & Mullejans, 1992; Danko, Arnaud, & Gely-Nargeot, 2009), and thus potentially reduced likelihood of perceiving environments as need supportive. As a result, getting older can affect narcissistic perceptions and behavioural tendencies such as decrease in self-admiration and exhibitionism (Carter & Douglass, 2018), lessening the feelings of authority over others (Danko et al., 2009), and forming stronger commitments (Roberts & Wood, 2006; Roberts, Wood, & Smith, 2005).

Overall, the present study went beyond existing evidence on the effects of personality traits on retirement adjustment by measuring how two different forms of narcissism can affect retirement adjustment and suggesting a possible mechanism behind that. The study results provide evidence that covert narcissism might alter the sensitivity of individuals to experiencing frustration within their social environment. In addition, the data support the proposition that the magnitude of response varies between individuals, with more non-favourable personality traits (covert narcissism) exacerbating responses to unfavourable conditions.

3.4.4 Strengths, Limitations, and Future Directions

The present study has a number of strengths. The primary strength of the current research is the attempt to provide an explanation as to how and why personality might influence the retirement adjustment process. Prior research is limited to exploring the links between personality traits and various indicators of retirement adjustment (e.g., Hansson,

Henning, et al., 2019; Kesavayuth et al., 2016; Löckenhoff, et al., 2010). Instead of measuring the direct effects of personality on well-being or life satisfaction, the present research has suggested and tested a theoretical psychological mechanism explaining those effects. Understanding how and why personality might influence the retirement adjustment can potentially shed some light for the reasons behind the previous inconsistent findings (e.g., Kesavayuth et al., 2016; Löckenhoff et al., 2009; Serrat et al., 2017) and will inform future interventions in later life.

The present work has gone beyond the ‘big five’ and included overt and covert narcissism in data collection and analysis. Previous research has only considered the impact of overt narcissism on loneliness and isolation in relation to retirement adjustment (Carter & Douglass, 2018). Therefore, findings in this study add to the scant literature on the effects of two types of narcissism in retirement contexts, which is particularly important as overt and covert narcissists seem to perceive environments differently.

Despite the several strengths of the current research, it is worth highlighting some limitations. First, the study applied a cross-sectional design, where only an association but not causation between variables can be determined. Cross-sectional studies also only involve data collection at one time point or over a short period of time (Levin, 2006), which could hinder understanding of a rapidly changing experience such as retirement (Wang et al, 2011). Therefore, in order to examine the influence of personality traits on perceived need support and how corresponding behavioural responses might change over the retirement transition, longitudinal design is recommended.

Second, the present study applied the vignettes methodology, which allows for a ‘snapshot’ of a systematic, controlled need supportive/thwarting environment but lacks construct and external validity (Evans et al., 2015). Participants could detach from the described scenarios, neglect interaction and feedback that are associated with ‘real life’,

which can increase the risk of not capturing a real-world decision-making process (Hainmuellera, Hangartnerb, & Yamamoto, 2015). Personality characteristics are known to influence participation in a range of leisure and social activities (e.g., Beier, Torres, & Gilberto, 2016; Stephan, Boiché, Canada, & Terracciano, 2014), which, in turn, might affect retirement adaptive or maladaptive behaviours (Hansson, Henning, et al., 2019). Therefore, examining how personality affects exposure and reactions to different ‘real-life’ circumstances and activities would be beneficial.

Additionally, future research should utilise validated techniques to create need supportive and thwarting environments in a controlled laboratory experiment (e.g., Deci, Eghrari, Patrick & Leone, 1994; Sheldon & Filak, 2008; Thomas, Hudson, & Oliver, 2019) before extending these propositions to more natural, longitudinal studies. This progression should assess actual rather than intended behavioural data, monitor how personality might alter responses to unfavourable environments over time, and in turn how these processes impact on well-being.

3.4.5 Implications

The present study suggests a mechanism that might underpin the relationship between personality traits and retirement adjustment through the differences in the interpretation and responses to various contexts. This will inform future research and interventions on how to identify older adults at higher risk of facing maladaptive outcomes after retirement and improve their experiences.

The findings that need satisfaction predicts adaptive behavioural responses, whereas need frustration is associated with maladaptive responses, is concerning. If the experience of need frustration in challenging retirement contexts leads individuals to choose maladaptive strategies (e.g., disengaging from the community or becoming more sedentary), especially in those high in neuroticism or covert narcissism, that might have

particularly negative consequences for their physical and psychological health. Conversely, those in more need supporting environments are more likely to further engage with adaptive behaviours (e.g., spending time with significant others, engaging in variety of social and physical activities). This might contribute to the existing gap in inequalities (Public Health England, 2017) in people after retirement. For example, those who initially have better financial or health conditions and thus more opportunities for different activities post-retirement are more likely to continue to engage with more satisfying experiences, whereas people in less favourable situations and with the ‘negative’ traits have higher chances to choose maladaptive behaviours in response to challenges. Therefore, future research should consider developing more person-oriented techniques to identify and help alter the negative cognitive styles associated with neuroticism and narcissism. Such interventions might include identifying individuals with those maladaptive traits through, for example ‘check ups’ in healthcare, workplace, or community facilities, and more tailored promotion of need satisfying choices, such as physical activity groups or social clubs (Ireland, Hepler, Li, & Albarracín, 2015; Lahey, 2009).

Additionally, if maladaptive outcomes are more likely to happen in need thwarting environments, the focus of future interventions should be on providing more need supporting environments for people at risk. For example, future work could explore the potential to design and implement interventions tailored to relatedness seeking experiences in retirement for those at risk of becoming isolated when exiting employment or to autonomy and competence support for people who experienced involuntary retirement. If need thwarting situation is combined with ‘vulnerable’ traits, adaptations of cognitive and behavioural interventions for stress management or preventing anxiety disorders and depression could also be used (Lahey, 2009).

3.4.6 Conclusions

To conclude, the present study extended our knowledge on the role of individual differences in retirement adjustment, tested the SDT informed mechanism underlying those differences. The results support the perceptual pathway suggesting that the magnitude of response to retirement situations might depend on personality differences, which affect interpretation of the situation as need supportive or thwarting. Personality did not add significant differences in the behavioural planning but exacerbated responses in unfavourable conditions associated with low need support or high thwarting. Traits of neuroticism and covert narcissism are most vulnerable to the ‘double negative’ effect of greater sensitivity to need thwarting and increased likelihood of orientating towards subsequent need avoidance behaviours, which might explain more negative retirement outcomes associated with those traits. From the applied perspectives, understanding which personality traits are associated with more maladaptive responses to retirement contexts and the mechanism behind it can help inform interventions aiming to maintain or improve psychological health in later life. For example, potential initiatives can identify individuals at higher risk of experiencing negative outcomes and provide more targeted need support or promote more adaptive responses to retirement associated challenges.

Chapter 3 Summary

Results of Chapter 3 suggest that different personalities' responses to retirement contexts can be explained by variations in interpretation of the environment as being need supportive or thwarting. Extraversion and conscientiousness increased sensitivity to feeling need satisfaction and decreased sensitivity to feeling frustration, whereas covert narcissism increased sensitivity to need frustration. Furthermore, personality can exacerbate behavioural responses in unfavourable conditions associated with low need support or high thwarting. Therefore, Chapter 3 added to the previous findings in this thesis that SDT could potentially explain retirement adjustment and the reasons for differences in retirement experiences.

It is worth noting that both Chapters, 2 and 3, focused only on certain psychological determinants (i.e., need satisfaction/frustration, identity, personality, identity, social networking, loneliness, coping mechanisms) that can affect retirement adjustment. However, retirement experiences can be affected by a wider range of individual, contextual factors, and their interplay. One way to deepen our understanding of this complexity is through a qualitative approach (Amabile, 2019). Furthermore, qualitative research can address the highlighted limitation of the vignettes methodology – a lack of external validity – by exploring how retired individuals behave in real-life contexts. As such, the next study explored experiences of retirement adjustment through the perspectives of retired individuals in a qualitative research.

Chapter 4

Exploration of Contributors to Retirement Adjustment through Lived Experiences of Retired Individuals

4.1 Introduction

4.1.1 Importance of Adaptive Retirement

The global ageing population is posited to become one of the biggest demographical transformations of the 21st century (United Nations, 2017). The major public health concern associated with the ageing society is extended longevity being accompanied by the increased number of years in ill health, which creates a growing burden on health and social care services (Christ & Diwan, 2008; Dall et al., 2013), working population, and financial institutes (Marešová, Mohelská, & Kuča, 2015; Nagarajan, Teixeira, & Silva, 2016). Therefore, enabling a greater proportion of older people to stay healthy and active has become one of the key priorities for health and social policies (Department of Health & Social Care, 2018; WHO, 2015).

Maintaining physical health and well-being in older age can be facilitated by behaviour change programmes (Kohl et al., 2012). However, initiation and maintenance of healthy lifestyles in older age remains a challenge for healthcare professionals because older adults vary significantly in their needs, abilities, and motivation for a healthy

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<https://fuseopenscienceblog.blogspot.com/2020/04/what-is-recipe-for-happy-retirement.html>

Elements of this research were presented at the BSG (British Society of Gerontology) Annual Conference, Bristol, UK, July 2020.

lifestyle due to differences in health status, socioeconomic backgrounds, and life histories (Brawley, Rejeski, & King, 2003; Kobayashi, Wardle, & von Wagner, 2015). One unique opportunity for influencing behaviours is during life transitions. Life transitions are often associated with role changes (Ory, Smith, & Resnick, 2012), changes in the physical and social interaction context, disruptions of everyday routines (Verplanken, Walker, Davis, & Jurasek, 2008). With heightened intentions in developing new routines and goals, transition time provides a window of opportunity to establish new healthy habits (Schäfer, Jaeger-Erben, & Bamberg, 2012). Furthermore, it is suggested that when old habits are disrupted, people might be more receptive to new information and adopt a mindset that is facilitative to behaviour change (Verplanken & Roy, 2016). The evidence has demonstrated the effectiveness of behaviour change interventions during the life course transition from adolescence to young adulthood (Wekerle, Waechter, Leung & Leonard, 2007). Some authors propose that retirement might be another life course transition suitable for developing healthy habits (e.g., Baxter et al., 2016).

Retirement is one of the important life transitions over the course of adulthood, which might lead to significant changes in an individual's financial conditions, social environment and roles (Jonsson, Borell, & Sadlo, 2000). Retirement might also have direct impact on establishing new habits and lifestyle, which in turn affect physical health and psychological well-being (Luhmann, Hofmann, Eid, & Lucas, 2012). As recent retirees almost inevitably undergo lifestyle changes, they can become a target for potential health promotion initiatives (Heaven et al., 2015). However, before implementing any behaviour change interventions, it is essential to fully understand the needs of the target population (Eldredge et al., 2016) and their perspectives on what might facilitate or hinder physical and mental health (Hardcastle & Hagger, 2016).

4.1.2 Understanding Retirement Process

Retirement literature has highlighted the importance of utilising theoretical frameworks for a better understanding of the retirement process (Heaven et al., 2015). While early theories of retirement have provided specific factors that may impact well-being and life satisfaction and described retirement trajectories post-retirement, they fall short in accounting for the differences in the relative importance of these factors to individuals. For example, social factors have been identified to be key to successful retirement adjustment and identity transition (Haslam et al., 2019), however, many theories do not account for the impact of individual differences or other contextual factors that might affect satisfaction with existing social relationships (e.g., coping mechanisms or working status of a partner). Furthermore, some retirement theories (e.g., disengagement theory; Cumming, Dean, Newell, & McCaffrey, 1960; Cumming & Henry, 1961; and activity theory; Atchley, 1971, 1987; Fox, 1981; Fox 1982; Morgan, 1976; Havighurst, Neugarten, & Tobin, 1963; Havighurst, 1963; Rosow, 1963) emphasise the importance of engaging with a variety of activities to support the continuation of roles and social connections with the society, which in turn helps to maintain well-being. However, retirement might not necessarily lead to social disengagement (Burn, Dennerstein, Browning, & Szoek, 2016; Pinto & Neri, 2017). Furthermore, even if social participation decreases through retirement, it does not always negatively impact individuals' well-being, as some older adults might prioritise more meaningful interactions and activities over less fulfilling ones, leading to experience of more quality relationships (Van den Bogaard, Henkens, & Kalmijn, 2012). These critiques point to the importance of understanding a range of factors, and their interactions, that facilitate one's choice of retirement path that can lead to positive retirement transitions.

Although more recent theoretical frameworks such as resources perspective approach (Wang, 2007; Wang, Henkens, & Van Solinge, 2011) have attempted to consider a wider range of factors, for example biological, social, economic and psychological processes, as well as historical and social changes throughout a life course (life course perspective; Elder, 1995; Elder & Johnson, 2003; George, 1993), both perspectives, like their predecessors, mainly describe retirement trajectories and factors contributing to retirement adjustment. They are unable to provide a universal mechanism linking predictors and consequences for well-being in retirement.

To address these shortcomings, self-determination theory (SDT; Deci & Ryan, 1985, 2000) provides a theoretical conceptualisation through which the influence of different factors in retirement adjustment can be explained. For example, evidence has demonstrated that basic needs can mediate the relationships between well-being and community esteem (Molix & Nichols, 2013), identity formation (Luyckx, Vansteenkiste, Goossens, Duriez, 2009), or passion for work (Houlihan et al., 2015), hence the relative importance of these factors to individuals' well-being is dependent on the extent to which their basic needs are fulfilled. Importantly, SDT can also explain how interacting with various environments affects well-being, which can be particularly relevant for individuals in the transition from work environments to retirement contexts.

However, SDT has its shortcomings in the explaining retirement as well as it might not be applicable for explaining the mechanisms behind the influence of demographic characteristics or biological determinants such as age, gender, ethnicity, education, physical and mental capacities. Furthermore, while SDT suggests that autonomy can be attained independently or with the support of others, there is evidence to suggest that only the former would contribute to well-being in retirement transition in the form of self-authoring one's own aims, desires, and stories (Bauger & Bongaardt,

2016). According to SDT, adopting choices made by trusted others can enhance intrinsic motivation and psychological well-being (Lyengar & Lepper, 1999). One can be autonomously dependent on others, willingly relying on their care, in particular when others are perceived as supportive (La Guardia, Ryan, Couchman, & Deci, 2000). Contrarily, according to the Ryff (1995) conceptualisation of psychological well-being (PWB), autonomy involves independence from others. As such, further research exploring if and how basic need satisfaction can explain retirement adjustment is warranted (Stenling et al., 2020).

As such, retirement is a complex phenomenon that is determined by multiple predictors and their interactions with each other, which can impact different people to varying degrees (Wang, 2007). Existing retirement theories only present pieces of the puzzle that attempt to describe, or at best, explain, the retirement experience. There is a need to develop a more integrative framework that can account for the interplays between various predictors of retirement adjustment.

4.1.3 Utilising Qualitative Approach

Retirement adjustment is conceptualised as a developmental process that does not only include the transition from employment to retirement but also encompasses long-term development post-retirement period (Hesketh, Griffin, & Loh 2011; Shultz & Wang, 2011). The variability of retirement experiences starts with the diversity of mindsets and circumstances at the beginning of retirement and precipitate through it (Robinson, Demetre, & Corney, 2011). For a more comprehensive understanding of this process in relation with individual and contextual factors, in-depth qualitative investigations of each journey are called for. Qualitative study can be beneficial as it helps to illuminate what people think and how they feel about retirement (Amabile, 2019; Heaven et al.,

2015). Furthermore, qualitative study can potentially address the shortcomings of the above-mentioned theoretical stances regarding retirement adjustments (Sewards et al., 2017), for instance what attributes a post-retirement activity or role should possess in order to facilitate positive retirement adjustment, what role autonomy plays in successful retirement adaptation, or when and how transition of identities and roles in retirement might happen.

Additionally, the qualitative approach can fill the gaps that substantial quantitative retirement literature has exposed. There is mixed evidence on the effects of demographic, social or psychological variables on retirement adjustment, for example job satisfaction (Smith, Holtom, & Mitchell, 2011), retirement planning (Donaldson, Earl, & Muratore, 2010; Yeung & Zhou, 2017), or marital relationships (Pinquart & Schindler, 2007; Price & Joo, 2005). From this wealth of research, it appears that there might be more variables or mechanisms still to be explored (Lindwall et al., 2017). One limitation of quantitative studies is that they do not provide a holistic picture of individuals' lived experiences, thus a host of contextual and individual factors unique to the individuals, and their interactions with each other, cultural differences in retirement practices (Hershey, Henkens, & Van Dalen, 2007; Luborsky & Leblanc, 2003), or different institutional arrangements regarding retirement expectations and norms might have been overlooked (Fasang, 2010; Heaven et al., 2015). Previous study of this thesis has already demonstrated that big five personality traits and narcissism can affect perception of the same retirement context and subsequent behaviour responses. However, there might be other individual differences beyond personality traits that contribute to variations in retirement experiences (Hansson, Henning, et al., 2019) that can be explored through qualitative approach.

4.1.4 Study Aim

The present study aimed to gain a comprehensive understanding of retirement phenomenon, identify the key components of successful retirement adaptation and understand *when* and *how* they contribute to retirement adjustment through the lived experiences of the target population. To address the research aim, the study employed a qualitative design using focus groups and semi-structured interviews with retired individuals. Given that retirement adjustment is a constantly evolving process, with experiences, expectations, and views changing over time, the study was conducted with individuals who have retired over varying durations – those who had retired for less than a year and those who had retired for more than five years, so that retrospective reflection of participants' experiences on retirement transition period can be obtained and that comparison with more 'acute' insights from recent retirees can be made (Djukanovic & Peterson, 2016).

Additionally, occupational background can significantly influence retirement adjustment. For example, non-skilled labour jobs are associated with lower financial income than professional occupations (Office for National Statistics, 2019), which in turn might influence the standards of living and health in retirement (Wang, 2007). Furthermore, evidence has demonstrated that occupational class might impact participation in work after retirement (Virtanen et al. 2017), attachment to a work role (Van Solinge & Henkens, 2005), or engagement in physical activity (Berger, Der, Mutrie, & Hannah, 2005; Van Dyck, Cardon, Deforche, & De Bourdeaudhuij, 2015) during retirement transition. As such, the study purposefully recruited retired adults from both manual- and non-manual occupations.

4.2 Methods

4.2.1 Participants

Twenty-nine participants (twelve females; aged 58-82 years) were recruited through diverse sampling approaches such as social media, word of mouth, communication with third-sector organisations, and posters located in social spaces (e.g., local cafes and supermarket community boards). All participants were from the North East of England, where the study took place. Each participant was offered a £10 shopping voucher for his/her time. Inclusion criteria included 'withdrawal from employment' but given the diversity of retirement pathways (Cahill, Giandrea, & Quinn, 2015), participants self-defined their retirement status. Potential participants were also asked about their retirement and employment histories to confirm their eligibility. Participants' qualifications were dichotomised into manual and non-manual based on the participants' description of their former jobs and the UK Standard Occupational Classification (Office for National Statistics, 2010).

Four focus groups were formed based on the length of retirement and the nature of their former occupation prior to retirement: one group for former non-manual workers ≤ 1 year in retirement, one group for former manual jobs ≥ 5 years, and two groups for non-manual jobs ≥ 5 years since retirement. Each focus group comprised of 4-6 adults. For those who could not be part of a focus group (e.g., due to personal preference or time constraints), individual interviews were conducted ($n = 10$). One interview participant was in semi-manual occupation and had retired ≥ 5 years. Table 4.1 presents the participants sociodemographic information. All participants read the Information Sheet (Appendices 6.N and 6.O for focus groups and interviews respectively) and provided informed consents for participation (Appendices 6.P and 6.Q for focus groups and

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interviews respectively) and a separate consent for being video taped in focus groups (Appendix 6.R) before participation. The study was approved by the Institutional Ethics Board.

Table 4.1

Participant information

Data type	Length of retirement (years)	Nature of former job	Gender
Focus group (FG1)	5.5 – 13	NM	2 females, 4 males
Focus group (FG2)	5 – 22	NM	3 females, 2 males
Focus group (FG3)	≤1	NM	2 females, 2 males
Focus group (FG4)	5 – 9	M	2 females, 2 males
Individual interview x 2 participants (I1, I2)	≤1	M	Female
Individual interview x 1 participant (I3)	≤1	NM	Female
Individual interview x 1 participant (I4)	≥5	NM	Female
Individual Interview x 1 participant (I5)	≤1	M	Male
Individual interview x 2 participants (I6, I7)	≤1	NM	Male
Individual interview x 2 participants (I8, I9)	≥5	NM	Male
Individual Interview x 1 participant (I10)	≥5	M	Male

Note. NM = non-manual; M = manual; SM = semi-manual

4.2.2 Procedure

All focus group discussions and individual interviews were conducted in meeting rooms on university campus. The discussions followed the semi-structured interview guide (Appendix 6.M). All focus group discussions were video- and audio-recorded and interviews were audio recorded, transcribed verbatim, and anonymised (pseudonyms are used consequently). At the beginning of each discussion, participants were reminded of the purpose of the study and guaranteed confidentiality. For the focus group discussions, participants were encouraged to interact with each other, with the primary researcher intervening solely to keep the discussion on topic, and to encourage more reserved members of the group to speak. Each focus group discussion lasted approximately 1.5 hours, the interviews lasted between twenty-five minutes and one hour. At the end of the discussions, participants were provided with the debrief sheet (Appendix 6.R).

4.2.3 Data Analysis

This qualitative study utilised thematic analysis in accordance with guidelines developed by Braun and Clarke (2006). Open inductive coding was used for developing and modifying newly identified codes (Braun & Clarke, 2006). An iterative approach, which encourages reading and re-reading collected data, reflection upon existing literature and theories, and revising developed codes, was applied (Tracy, 2019). Nvivo 12 software was used to assist in the analysis process (Bazely & Jackson, 2013).

An emic perspective was initially used to identify the main contributors to retirement adjustment via thick description and participant's own words and perspectives (Patton, 2010; Tracy, 2019). After examining the data, an etic perspective, which uses existing theories, hypotheses, and perspectives as constructs to explore if they apply to the target population (Willis, 2007), was taken to explain and interpret emerging findings

(e.g., SDT, existing retirement theories and literature). To reduce subjectivity, ensure rigour and credibility of the analysis, the data were simultaneously reviewed and interpreted by myself and another researcher with the experience in qualitative methods. We met up regularly after coding every two transcripts to discuss and reflect on each other's codes and themes, and to explore multiple and alternative interpretations (Smith & McGannon, 2018). If a new theme emerged during the meetings, each of us went through the data again to identify the evidence. Data analysis continued until saturation has been reached, when sufficient depth of understanding has been achieved in relation to emergent categories (Nelson, 2017) as it was discussed and agreed on.

After all the transcripts were coded, discussion focused on the hierarchy of themes, specifically if any themes could be collapsed (e.g., lower order themes such as 'sleeping habits' and 'exercising' were labelled under higher order themes 'routines' and 'maintaining health', respectively). The most prominent themes and how they addressed the research question on the key components of retirement adjustment were also explored (Ling, Farrow, Farrow, Berry, & Polman, 2016). Finally, an assistant researcher, the supervisory team, and I reviewed the results to check if the quotations were reflective of each identified theme.

4.3 Results

The aim of the current study was to enhance the understanding on the factors that contribute to retirement adjustment from retired adults' own accounts. Three prominent themes emerged from the focus group discussions and individual interviews that addressed the study aim, and they were categorised into 1) identity reconstruction, 2) social interaction, and 3) independence.

4.3.1 Identity reconstruction

A prominent theme that threaded through the majority of the FG discussions and interviews is identity reconstruction. For some, especially those who were passionate about their jobs, their identity was shaped by their professions which provided them with a sense of self-worth, as illustrated by Simon, “I think when you’ve got a job you do define yourself a bit by your job... And you’ve got in your own mind a higher status of yourself” (FG 1). This identity loss seemed to continue for a prolonged period post-retirement, and the sentiment was one of redundancy, as if “I’m a tiny-tiny cord in the machine. But of course, that cord now is being taken... that you are not really needed” (FG 1). Expectedly, conscious efforts were made to mitigate some challenges with the identity transition by some recent retirees. For example, Ronald (a former school head teacher) admitted that he still saw himself as a teacher. However, he consciously tried to detach himself from that identity by looking for other roles as a father or a retiree and avoiding conversations with former colleagues about school updates. He considered detachment from this work identity to be desirable for his mental health:

Because I can’t do anything about it anymore it would be wrong for me to try...it’s quite healthy that degree of detachment. Coz otherwise, I think you can spend time ruminating and thinking “Oh, well, they’re changing this, they’re changing that. I wouldn’t have done that”. (I 6)

It commonly appeared that finding new activities and a sense of purpose in those activities was important for successful detachment from former identity.

Regardless of the type of former occupation or length of retirement, engaging with other activities after leaving their job appeared to give several participants feelings of self-worth and value, which was previously gained through one’s occupation. These

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activities varied in nature, from volunteering, community involvement, helping family members and friends, to hobbies, exercising, studying, or even taking part in research studies. In some cases, new activities seemed to facilitate the continuation of a former work identity as illustrated by Rachel:

And now I'm not a midwife. But I think that is one of the reasons I started to do volunteering. I think I enjoy helping. I suppose if I've been in a caring profession, it's a different way. It's reading with children but it's helping them. (I 2)

In contrast, for others, activities and responsibilities helped to move from one identity to another as demonstrated by Ronald, whose main role after retirement became a "father for two daughters" (I 6), or Martin (FG 1) for whom post-retirement education provided a new identity as a "Doctor Martin". Notably, studying post-retirement was particularly valued by several participants as it greatly supported the feelings of achievement as shared by Amanda, "And I loved college. That gave me a little sort of... get my belief in me again" (FG 2). Furthermore, getting new knowledge helped to "keep (an) active mind" after retirement.

It appeared that keeping an active mind was also a priority because it helped to facilitate a "mental attitude to adapt with younger people" (Sarah, FG 1). 'Old person' identity did not appeal to the majority of participants as it was associated with physical and mental deterioration and the proximity of death. Another reason for the desire not to be seen as 'old' was the ageing stereotypes in society. Many expressed that society tended to underestimate older adults' contributions in terms of their experience and skills, which can negatively affect older adults' career choices, for example, "When you get a certain age it's not easy to get a job of any sort. You just take what you can" (Olivia, I 4). Interestingly, only one participant, who had worked and retired in Asia, expressed

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positive feelings about being considered as an elderly. From his experience, Asian cultures “seem to respect old people more than in England”, and so families are more willing to look after their elder relatives more than in the west (Tom, I 8). It suggests that the perceptions of ageing in society can impact the ageing experience and identity.

For some participants one way to stay ‘young’ as long as possible was to engage in more activities and have goals to accomplish. Being active and engaged in retirement was universally considered to be pertinent to well-being in retirement, as different activities provided the purpose that was missing in life. Peter explained his motives for volunteering, “The main reason for volunteering was because I’m selfish. When I retired, I needed the reason to get out of bed in the morning. And I needed the reason to keep me out of a pub” (FG 4). Simon shared similar reasons for taking part in research studies, “It gives you reason to get up I suppose. And you’ve got an appointment. You keep to that appointment, you do it. And then once you’ve done it you feel a certain sense of fulfilment” (I 9). It appears that the primary reason for involving in an activity was not necessarily the activity itself but a sense of commitment and accomplishment associated with it.

Additionally, fulfilling a day with activities provided a new routine. The concern about losing the structure of time after retirement was shared by many participants. For example, James expressed the importance of routine and the disadvantages associated with losing it after retirement, “A lot of people who retire are scared of it because they haven’t got anything in place. They haven’t got what we call a routine they look forward to in later on after they retire” (FG 4). By contrast, recent retirees often viewed the lack of structure or routine as an advantage of retirement, something they were looking forward to and really enjoyed at the beginning. Early retirement was experienced by

many participants as a “detox process” (William, FG 3) or “extended holiday” (Ronald, I 6) with regards to letting go of the stressors of work and finally having a relaxed time.

To sum up, identity reconstruction after retirement was one of the most prevalent themes across participants’ accounts. Involving in activities and finding personal meaning, goals, and structure in them seemed to be key to successful identity transition.

4.3.2 Social interaction

Not only can identity be developed through engagement with activities, it can also be attained by being part of a social system through which a sense of purpose and personal value can be fulfilled. The importance of interacting with others within family networks, friendship, or community activities was another prevalent theme noted from the focus groups and interviews. A number of participants, both ‘long-term’ and recent retirees, recognised a decrease in social communication post-retirement as their former workplace had significantly contributed to their social life. In addition to human interactions, work provided a sense of belonging, connectedness, and emotional support. The value of social connectedness at former workplace was well illustrated by Helen, “I’ve missed being part of a team. I loved being part of a team. I’m very much team player. And you form a bond with people... when you’re in a team and you share each other trials and tribulations” (FG 1). However, some participants also highlighted that feelings of belongingness and need to connect were not necessarily a purpose of this social interaction but rather an opportunity “to go out, meet people”, have a short conversation without any obligations.

In order to regain the benefits of being part of a social system, compensate for the lack of interaction with others after retirement, many participants were motivated to engage with new hobbies, volunteering, and exercising. Activities that aimed to bring

together people in the same stage of life, such as through Elders Council, University of the Third Age (U3A) or WI (Women's Institutes), had become valuable sources of social support for some to prevent isolation and to build a sense of belonging, for example Amanda shared, "I realised how quickly you can become alone. So I forced myself to join things like WI and U3A" (FG 2). Notably, some participants in the focus groups were very interested to learn from each other about available opportunities for older adults in the local area.

Despite the loss of the social circle from work, several participants noticed that their social activities increased after retirement partly due to increased spare time. Another reason appeared to be actively seeking social connections after retirement and attempts to maximise interaction opportunities during social activities. For example, Kathleen (FG 3) tried to have a conversation "with at least one person" every time when she engaged with running groups. Similarly, Christopher described how he purposefully engaged in the conversations with patients during his volunteering hours, "Certainly, I interact when I go and do charity work and driving. When I drive patients... I can talk to them" (I 7).

To conclude, former work provided with day-to-day communication, emotional support, connectedness, and sense of belonging that were often missing after retirement. The variety of new activities became an important source for social interaction after retirement. Aiming to compensate for the decrease in communication and prevent loneliness and isolation, varying social activities were sought after.

4.3.3 Independence

While belonging to a social system seems to be crucial for well-being, it could also compromise one's independence. The value of independence was emphasised by several

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participants. For instance, Paul seemed resentful of the fact that his lifestyle had been dependant on the plan of his family and friends due to his health conditions, “I’ve been pressurised by friends or family for things that I don’t wanna do, I wanna do what I wanna do, not what they want to do” (I 5). For Paul it was particularly important to engage with activities and behaviours of his own choice. Similarly, Margaret had felt obliged to baby-sit because “I feel guilty if I say ‘no’ when I’m not working” (I 3). Some would consciously stay away from committed relationships, which might incur undesirable responsibilities, and preferred to live by themselves. For example, Patricia left her husband after retirement, “I didn’t want to share finances, I wanted to be responsible for me and what I’ve got and would live with it” (FG 4).

Interestingly, although the majority of participants shared that increased independence, freedom of choice, and the lack of commitment were the most satisfying aspects of retirement, for those where retirement was involuntary, increased freedom appeared terrifying at the beginning of their retirement. Circumstances could be related to health issues, company relocation, caring responsibilities, or even forced retirement. It appears that unplanned retirement was also more likely to result in feeling “lost” as expressed by Peter who was forced to retire from the army, “I had no planning to do, nothing. I was just sitting in the chair there and I felt terrified for an hour or two” (FG 4).

Among other prominent factors that may hinder independence and freedom of choice in retirement were health and financial conditions. Regarding the former, health represents not only physical conditions, but it is also key to independence, as Olivia articulated:

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You haven't got your health you can't do things. If you retired and you got in good health, then you're lucky and you can do what you like but if you're not in good health, then your life is very much restricted. (I 4)

Almost inevitably, the restricted range of activities due to physical limitations could also negatively impact the desired level of social interactions as expressed by Tom, "...unfortunately a few years ago my tendons and ligaments started giving away on me. So I couldn't play anymore...I really enjoyed playing squash not only for the exercise but also for the social activity" (I 8).

As resonated by many, personal financial condition was a key contributor to one's physical and mental well-being, and for some, its importance was over and above one's health conditions.

But I think if you didn't have your pension that would affect your health...that would have a not good effect on your health, whereas if you got your pension it can to a degree help you with your health because you haven't got to worry... (James, FG 4)

With the increased spare time post-retirement, finances could support more activity options such as exercise classes, hobbies, or educational opportunities which would promote independence.

One of the most anticipated activities that supported independence after retirement was travelling. Several participants considered retirement to be conducive to travel opportunities with greater flexibility in time use and older age benefits such as free bus pass and railway discounts as Christopher shared:

I can travel where I like on a bus with the bus pass, it's great. How long for and who knows but I mean it does mean that you don't have to sit in a house. You can

actually get out and about, which is probably more important to a lot of people.

(I 7)

Furthermore, having an opportunity to choose when and where to travel appeared to support independence and autonomy, "...and then if I want to travel I don't have to book holidays or anything from work, I can just please myself" (Brenda, I2). However, it was emphasised that this activity was also determined by financial situation, health limitations (e.g., inability to drive due to eyesight problems) and/or external constraints (e.g., living in rural areas with poor public transport networks).

Notably, physical activity was frequently discussed as an important tool to support independence, freedom of choice, physical health, and well-being in retirement. For example, Amanda shared:

I was mentally seeing myself, there is light at the end of this tunnel. And then I can walk. I'm gonna start again from scratch because I was fragile. And for me exactly like Lauren said I filled every day with some kind of exercise, your whole well-being changes, even if it's a long walk like you mentioned. So for me the opportunities seemed - I can retire, I can look after my grandchildren, and I can actually have some me time. (FG 2)

In addition to physical independence, intellectual independence was also valued by many through reading and learning. Many retirees tried to improve their knowledge and keep up-to-date in different fields, including politics, economics, IT technologies, and science, out of genuine interest as they wanted to make sense of the excessive and often contradictory information, "Who do you actually believe? Who really knows what they are talking about?" (George, FG 2). Health-related knowledge was particularly sought after as it could provide a sense of control and empowerment, as illustrated by

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John, “I’d like to know what everybody should be doing at the retirement age. Should be we doing ten push-ups and press or whatever...or not?! Just what is safe?” (FG 2). For some, intellectual independence was upheld through selectively engaging in intellectually stimulating communications. Also, developing dementia appeared to be a common fear. Many participants emphasised the importance of maintaining mental health and reducing cognitive decline in older age, some admitted that the reason to engage with intellectual activities was to prevent dementia.

As such, physical and intellectual or mental independence was viewed as one of the greatest priorities in later life. For most participants retirement facilitated independence but forced retirement could negatively affect one’s feelings of independence and control over situations. Some activities such as exercising, travelling, and education were particularly important for supporting independence. However, the choice of activities was often determined by health and financial conditions, both were the most common concerns associated with retirement and older age.

To sum up, three main themes for identity, social interaction, and independence appeared to be the most significant psychological predictors of well-being after retirement (Table 4.2), and they interact with each other to formulate the lived experiences of the participants. Activities and roles that provide with these three elements seemed to lead to more positive retirement experiences.

Table 4.2

A summary of the factors associated with retirement adjustment

Identity Reconstruction	Social Interaction	Independence
Setting new goals	Belongingness, connectedness, and emotional support obtained from family, and new social groups from activities.	Physical independence facilitated by health and financial conditions.
Developing a sense of purpose through establishing a routine		Intellectual independence.
Developing self-value		Sense of freedom gained from minimal social commitments.
Gaining a sense of accomplishment from activities and new roles.	Fear of social isolation – motivation to engage in activities.	

4.4 Discussion

The primary aim of the current study was to further our understanding of retirement adjustment through exploring the lived experiences of older adults who have retired over varying durations from both manual and non-manual occupations. Three prominent themes were identified from focus group discussions and individual interviews – identity rebuilding, social interaction, and independence. Importantly, SDT can also be used to explain retirement experiences and the identified contributors to retirement adjustment. The following section discusses the main themes, how the findings can be interpreted through the lenses of SDT and existing retirement literature, and how the identified contributors to retirement adjustment interact to the development of a new framework.

4.4.1 Main findings

Regarding identity reconstruction, this theme resonates with existing evidence on the key role of identity rebuilding in retirement adjustment (Haslam et al., 2019; Price, 2000; Reitzes & Mutran, 2006). Many retired adults in the present study went through an “identity crisis” due to the loss of their work role. To compensate for that loss, the

participants consciously or unconsciously tried to substitute it with new activities and roles, reinforced importance of other spheres of their lives, or reactivated old habits and interests. However, not every activity can provide an individual with a new meaning, and recently retired individuals often go through the exploration process to find such fulfilling and satisfying activities (Wang, Douglas, & Waters, 2014). Our findings suggest several attributes that might enable identity reconstruction and successful retirement adaptation.

One of the factors was social relationships. Our results suggest that a major drawback of retirement was the loss of a former social circle from which personal/social identity is defined. Maintaining or re-establishing new social connections after retirement was a positive contributor to retirement adjustment for many, as meaningful social relationships can provide emotional support, sense of connectedness and belongingness, and in turn, this would lead to greater enjoyment and engagement with new activities and roles. This indeed echoes the conceptualisation of the need for relatedness in SDT (Deci & Ryan, 2000). To cultivate relatedness, our findings pointed to the need for intellectual stimulation and an aspiration to have a positive impact on others, for example younger people. Some participants from the present study appreciated communication and positive influence they could provide to “youngsters”. Such interaction might support social bonds between generations, feelings of participation in society and self-esteem among older adults (Skropeta, Colvin, & Sladen, 2014; Baurger & Bongaardt, 2016). Furthermore, the intentions to continue having a positive contribution to the society might indicate the need to feel competent after retirement. As discussed, participants experienced the negative influence of ageing stereotypes, which could thwart their feelings of competence (Sobieraj & Krämer, 2019).

Chapter 4. Exploration of Contributors to Retirement Adjustment through Lived Experiences of Retired Individuals

Engagement with community activities provided retired adults an opportunity to demonstrate their skills and knowledge, feel valued and rewarded.

Interestingly, while previous literature views high-quality social relationships to be a basis on which self-worth and competence are developed (Wang et al., 2014), our findings somewhat refuted this link. In some cases, the lack of accomplishment or self-worth hindered the satisfaction with a role despite the presence of close social relationships. Contrarily, some other roles and activities were highly valued for providing a sense of achievement and mastery, even when they did not involve meaningful relationships (e.g., exercising, professional consultations). Therefore, regardless of the existence of social relationships, an increased sense of self-worth and competence obtained from the role or activity generally seemed to increase enjoyment in retirement.

Another factor inextricably linked to identity transition and retirement adjustment is independence in the choice of new roles and activities. A novel finding in the present study is the weight given to physical, intellectual, and social independence, over and above previous research suggested (Baurger & Bongaardt, 2016). Although social bindings were valued, having a choice as to when to be socially engaged, and to what extent, seems pertinent to individuals. For example, a few participants mentioned their need to stay away from family and to be alone even though they recognised families to be important sources of social connectedness. This urge for independence extends beyond the freedom from family and social commitments, to the choice of day-to-day and leisure time activities. The need to experience freedom over one's own choices and behaviours resonates with autonomy need in SDT. However, for participants in the present study it was also essential to fulfil their autonomy through being independent from others (Ryff & Keyes, 1995), without relying on others people's support. This

highly guarded priority reflects participants' desire to gain control over their own lives to maintain/strengthen their physical and mental health (i.e., preventing development of dementia and/or cognitive decline), through engaging in physical and intellectual activities.

One factor that might contribute to the differences in the priorities is the age of the retired participants. For example, Neubauer, Schilling, and Wahl (2015) reported that environmental mastery or competence was a more important predictor of subjective well-being among very old adults (87–97 years) than autonomy. It might be due to the fact that as very old people's perceived physical capability decreases, competence satisfaction becomes a higher priority (Neubauer et al., 2015). Contrarily, the need for independence may have been magnified in our younger participants (59-82 years) in recognising the imminent gradual health decline in future.

This feeling of control and independence can be gained through establishing a new routine. As evident in some recent retirees, the lack of planning for the new routine before or during retirement negatively affected one's sense of purpose, and those who had retired for a while admitted that having a new routine facilitated their satisfaction with retirement. This is also applicable to planning for new domestic arrangements such as housekeeping duties or plans for leisure time in order to promote social harmony post retirement. Ekerdt and Koss (2016) suggested that daily routine was essential for retired adults in order to fully use the potential of a newfound autonomy, fit all the different activities and adhere to the ideas of active ageing. Furthermore, planning can facilitate competence satisfaction through setting and accomplishing goals (Smith, Ntoumanis & Duda, 2007). One important condition for planning to facilitate a greater enjoyment with life and retirement is that activities and routines should have been chosen based on

individuals' own preferences as opposed to family-imposed schedule or other social obligations, which again highlighted the importance of independent choice.

Important to note is that there existed plenty of individual differences in how the retirees fulfilled the three core components to retirement satisfaction. It was evident that individual preferences, expectations and previous experiences largely affected the choice of activities. For some, social interaction was the determining factor in selecting exercise clubs or groups, whereas others tended to make their choice based on the perceived benefits for health. Previous positive experiences from engaging in an activity, be it due to social support, competence satisfaction, or enjoyment, was also a driving force behind the activity choice. Therefore, when considering measures to enhance retirement satisfaction, these individual differences must be taken into account so that autonomy can be fulfilled.

Overall, the experiences and identified components of retirement adjustment can be explained by SDT. Participants often seemed to experience the decrease in competence, relatedness, and autonomy satisfaction after leaving employment. Furthermore, some experiences suggested active need thwarting (e.g., ageing stereotypes, imposed family obligations), which had a negative impact on retirement adjustment. Retired participants often attempted to engage with roles and activities that would compensate for the loss in need support, and success in finding such need supportive contexts predicted identity rebuilding, well-being, and positive retirement experiences.

4.4.2 Retirement Adjustment Framework

Based on our findings, a new retirement adjustment (R-Adj) framework on factors contributing to the positive retirement experiences has been proposed (Figure 4.1). This

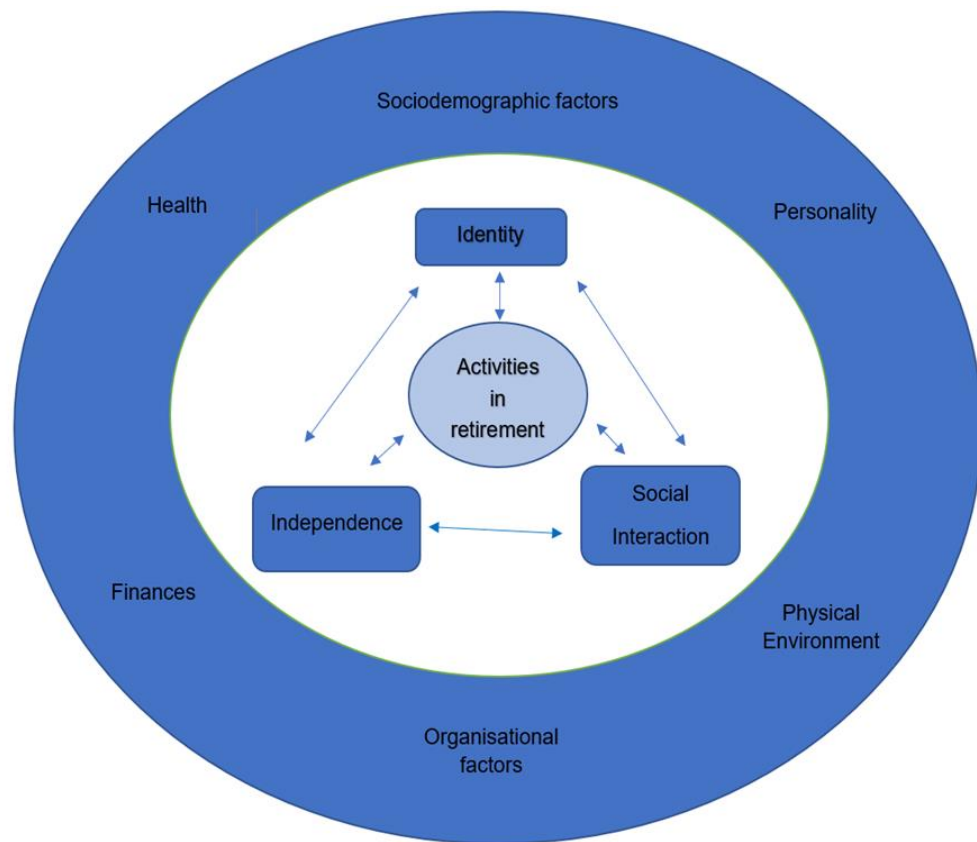
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framework demonstrates the relationships between the three themes and how they interact with each other. For example, roles and activities that people choose might affect their social environments. In turn, social interaction and belongingness to social groups shape people's identity. Independence affects the amount of social interaction one can have but social environment might also inhibit or support the feelings of independence. The centre of the figure indicates 'Activities', which refers to the range of activities people may engage with such as hobbies, exercising, volunteering, or family commitments. The central location is given to the activities as they become the main source of new identities, independence, and social interaction for the participants. At the same time, identities people associated themselves with, ability to provide social support and independence influenced the choice of activities.

A range of activities and the degree of involvement varied significantly between participants and appeared to be considerably influenced by different individual factors such as individual differences, finances, health status, sociodemographic characteristics, physical environment, structural and organisational factors, all are located in the outside layer of the framework. Not only do the factors in the outside layer affect the choice of post-retirement activities, they also create the conditions for social interaction, identity formation, and providing independence.

Figure 4.1

Retirement Adjustment (R-Adj) Framework



4.4.3 Differences between Subgroups

The present study attempted to explore the experiences of individuals who retired over various durations of time ago and from different occupational backgrounds. Some differences between those groups were observed.

First, for the individuals who retired no longer than a year, detaching from a professional identity seemed to be a more ‘acute’ issue that generated more negative feelings as early retirement is associated with identity transition and search for a new meaning (Haslam et al., 2019; Wang et al., 2014). While those who retired for five years or longer had already adjusted to a new lifestyle and roles, recent retirees were still likely undergoing retirement transition.

Second, recent retirees appreciated the lack of a day routine in retirement more than those who retired a long time ago, which is also aligned with existing evidence and theories (e.g., stage theory; Atchley, 1976). The separation from a prior routinisation is a common process after work exit. Recent retirees tend to enjoy breaking business routine, personal habits and avoiding schedules (Luborsky, 1994). The desire for the 'honeymoon' phase during retirement transition can be viewed as a yearning for freedom. Freedom from obligations and work stressors is the most anticipated among the recent retirees (Weiss, 2005). However, after the realisation that sense of purpose or self-value still needed to be satisfied, retired adults often tended to establish a routine again.

No notable difference in retirement adjustment between manual- and non-manual workers has been observed. Regardless of the employment type, retirees found it more difficult to separate themselves from their work identities if they were passionate about their employment and felt valued. It also seemed that some individuals who changed their work roles more frequently during their employment life found it easier to detach from a work identity. Previous life experience, particularly during life transitions, might affect an individual's ability to cope with retirement transition (De Wind, Van der Pas, Blatter, & Van der Beek, 2016; Hendricks, 2012). Therefore, individuals who had to change work roles often, might have been more psychologically prepared for identity transition in retirement.

4.4.4 Strengths, Limitations and Future Research

One strength of the present study was the attempt to include participants with labour and non-labour work experiences and view how different occupational backgrounds might influence retirement adjustment. The study also included individuals who retired over

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various durations, which allowed to compare the perceptions and thoughts of recent retirees and those who retired for a period of time. Furthermore, the advantage of the present study was employing qualitative method for studying retirement adjustment as the design allowed revealing a range of contextual factors such as the views on ageing in different cultures or individuals' life histories.

Several limitations of this study are acknowledged. Comparative views between recent retirees and those who had retired for a longer period relied on participants' retrospective accounts. An addition of longitudinal qualitative study might benefit our understanding of a frequently changing retirement experience, key events, their subjective approvals, and decision-making process (Heaven et al., 2015).

Due to practical reasons, focus groups were combined with semi-structured interviews instead of adopting the former alone. Nonetheless, conducting both interviews and focus groups can enhance data completeness. Each method may reveal different aspects of the research phenomena and thus contribute to a more comprehensive understanding of it. Additionally, combining individual interviews and focus groups may be used for confirming the trustworthiness of the findings (Lambert & Loiselle, 2008). In the present study, the findings from interviews and focus groups complemented each other. Although each focus group revealed more themes such as the effects of ageing stereotypes on individuals' behaviours or different views on independence after retirement, the interviews allowed details about each participant' individual circumstances to be captured.

With regards to transferability of the results, it is worth noticing that the majority of the participants characterised themselves as financially secure. Therefore, the results of this study might not be taken as transferable to retired adults who lack such financial

resources. In addition, the data collection took place in one of the most ethnically homogenous areas of the UK with all participants identified as ‘White British’. Retirement experience and lifestyle behaviours are likely to be shaped by socioeconomic background and cultural norms (Wang, 2007). As such, the inclusion of people from both deprived backgrounds and ethnic minorities would be an important consideration for future research.

4.4.5 Implications

The R-Adj framework can be used to inform public health initiatives for retired adults. A potentially effective intervention needs to consider individual psychological factors involved in retirement adjustment (identity rebuilding, social connections, and independence) in connection with contextual factors. Importantly, results of the present study also suggest that SDT can be used to support health and well-being in retirement, particularly by providing need supportive contexts.

Interventions targeting individuals in retirement transition should focus on building a routine of activities that can potentially provide with new self-definitions. Activities and roles that provide social inclusion and support relatedness are more likely to facilitate new identities acquisition (Haslam et al., 2018). It is also evident that the social environment can be a motivating factor for initiating and maintaining new activities after retirement such as joining exercise class or volunteering. Therefore, promoting social support can be also used to increase interest in certain healthy behaviours.

In order to facilitate identity rebuilding for positive retirement adjustment and attract more interest to engage in health-related activities, it is also important to support retirees’ urge for independence. The provision of an independent informed choice in

activities can be particularly beneficial. One way to build a new routine and support freedom of choice is through individual planning for activities and roles after retirement based on one's own preferences and available resources (i.e., individual health, financial status, local facilities). This can be implemented through interventions that promote social and health planning for retirement and enhance self-efficacy for planning. Setting goals can have positive impacts on independent accomplishment and achievement (Oga-Baldwin & Nakata, 2015) and therefore support competence.

R-Adj framework illustrates that individual psychological predictors of retirement adjustment cannot be separated from contextual factors, which should be considered in intervention design and implementation. One of the first steps of developing effective interventions for diverse retired populations should involve an assessment of local communities in relation to their own needs, priorities, and resources (Ploeg et al., 2019). It is also beneficial to engage retired adults in the development of new initiatives. Such measures can increase the acceptance and potential effectiveness of the interventions by accounting for local contexts, needs, and interests of the target groups.

Additionally, more resources (e.g., financial, organisational) can be dedicated towards building community relationships and initiatives. Reinforcing community links and community-based activities can be particularly valuable for those experiencing retirement transition and for the most vulnerable individuals (e.g., at risk of social and/or physical isolation, with health issues, financially insecure). Community activities can provide with a sense of purpose and social support but also empower individuals (Herens et al., 2015), encourage them to take control over the choice and implementation of initiatives based on individual and local needs and resources.

4.4.6 Conclusions

Retirement pathways can vary considerably, which creates challenges for the exploration of retirement phenomena, applying theoretical frameworks to universally describe retirement processes, and designing health promotion initiatives in older age (Heaven et al., 2015; Lytle, Foley, & Cotter, 2015). Despite the diversity of circumstances and mindsets among retired adults, the present study has identified the three psychological components contributing to retirement adjustment expressed through the retirees' lived experiences. These factors include identity rebuilding, social interactions, and independence, with independence highlighted to be a priority for retirees. Crucially, the newly developed R-Adj framework has captured and explained the factors that shape positive retirement adjustment, while bringing together, and refuting, aspects of the existing retirement theories. Importantly, to a large extent SDT could explain the role of the identified components in retirement adjustment and the reasons behind the differences in retirement experiences. Leaving employment was often associated with decrease in need support or even need thwarting, whereas engaging with need supportive environments and roles predicted more positive retirement outcomes.

The results also support previous suggestions that retirement transition might provide an optimal point to promote health and well-being (Heaven et al., 2015). Recent retirees experienced significant changes in lifestyle, more noticeable and 'fresh' identity transition period, and the most prominent call for independence as compared with individuals who have retired for a longer period of time. Furthermore, retired adults in our study seemed to view health as one of the biggest values in their lives, expressed interest in maintaining health, and were willing to sustain or improve their lifestyle, mostly through engaging in activities that address the three core factors within the R-Adj framework and need supportive activities.

Chapter 4 Summary

The results of the qualitative study identified the main psychological components of retirement adjustment – identity rebuilding, social interaction, and independence through the retirees’ lived experiences. These three components, all of which anchor on activity engagement, became a basis for a proposed retirement adjustment (R-Adj) framework, which incorporated both individual and contextual predictors. Qualitative findings in Chapter 4 also added to the appropriateness of using SDT to explain retirement adjustment, for example by demonstrating that retired adults could lose need supportive contexts after leaving employment (e.g., relatedness satisfaction from relationships with former colleagues) and tried to acquire need support in other contexts (e.g., reinforcing family relationships, joining new activities and hobbies).

Therefore, activities and behaviours that support basic needs, identity rebuilding, social interaction, and independence during retirement transition can facilitate retirement adjustment and potentially improve later life experiences. This should be considered when designing and implementing initiatives aiming to support well-being of retired adults. Importantly, by supporting the identified contributors to retirement adjustment, it might be possible to promote health activities and behaviours. For example, some participants in the qualitative study admitted joining PA groups for the purpose of social interaction and getting into routine after retirement. As such, next study of this thesis (Chapter 5) developed a health promotion intervention for retirement transition.

Chapter 5

Developing a Health Promotion Intervention for Retirement Transition

“When you see films where people are in prison and they want to escape... They are so focused on how they get out, they don’t even think about what they do when they’ve got out. It [retirement] almost feels like it’s the same thing”.

Sarah (research participant, pension communications and engagement consultant)

5.1 Introduction

5.1.1 Overview

The world population is ageing rapidly (UN, 2019). One of the major challenges associated with an ageing society is an increase in healthcare demands due to age-related chronic disease, disabilities, and dementia (ONS, 2018). Therefore, it has become a priority for public health bodies to prevent or delay health deterioration and promote positive health including physical, mental and social well-being in later life (Department of Health & Social Care, 2018). Transition to retirement has been identified as a promising point to intervene and promote healthy behaviours due to disruption in old routines, the need to develop a new lifestyle, and increased intentions to maintain or improve health (Moffatt & Heaven, 2017; Van Dyck, Cardon, Deforche, & De Bourdeaudhuij, 2015; Verplanken & Roy, 2016).

Whilst retirement transition can be conducive to behaviour change that supports physical health and well-being, it is also presented with challenges. Most notably,

retirement often comes with identity crisis (Barnes & Parry, 2004), a lack of everyday structure and purpose (Moffatt & Heaven, 2017), loss of financial freedom (Wang, 2007), and an increase in social inactivity (Haslam et al., 2019; van Dyck, Cardon, Deforche, & De Bourdeaudhuij, 2015), all of which can negatively affect physical and psychological health in later life. Results of this thesis also suggested that retirement is associated with reduced need satisfaction, as the workplace is a context in which most people feel autonomous, competent, and connected with others (Houlihan et al., 2015). This sudden loss of a highly need supporting environment is one explanation for the decreased well-being many experience in retirement (Henning, Bjälkebring et al., 2019), for example income loss can limit freedom of choice and thus affect autonomy, loss of work-related social support and belongingness can thwart relatedness, and loss of structure and work-related goals might lead to competence frustration.

Another issue associated with retirement is decrease in physical activity (PA) (Hawkins et al., 2009; Takagi, Nishida, & Fujita, 2015), which is concerning as PA can have multiple benefits for physical health and well-being (Anderson & Shivakumar, 2013; Lee et al., 2012), and quality of life in older age (i.e., providing independence, routine, social interaction; McPhee et al., 2016). Despite the positive intentions to increase PA after retirement, many retirees fail to maintain PA in the long-term (McDonald, O'Brien, White, & Sniehotta, 2015), especially if exercising was not a regular habit.

Therefore, people experiencing retirement transition might benefit from a support system that can foster a sense of purpose, encourage developing or maintaining healthy habits such as PA, social participation, and engaging with activities that can provide basic need satisfaction. One way to support health and well-being during retirement transition can be through encouraging lifestyle planning (Yeung & Zhou, 2017).

5.1.2 Encouraging Retirement Planning

Many people plan financially for their retirement (Heraty & McCarthy, 2015). However, recent evidence recommends that retirement planning should not only focus on the financial aspects, but also encourage health, lifestyle, and social preparatory activities for a more adaptive retirement adjustment (Noone, O'Loughlin, & Kendig, 2013; Yeung, 2013; Yeung & Zhou, 2017). Setting positive goals for the future and lifestyle planning can positively contribute to physical and psychological well-being in retirement by encouraging individuals to consider and subsequently engage with physical and social activities (Yeung & Zhou, 2017) that provide new routines, sense of purpose, new social circle in retirement, and help to maintain or improve health. Planning while still at employment might help to prevent an abrupt change in lifestyle, facilitate a 'smoother' transition of activities and roles to retirement. Importantly, active engagement of pre-retirees in the process of planning provides with a personalised approach in selecting activities based on one's own preferences, which supports the feelings of freedom and control in life (Ekerdt & Koss, 2016).

In line with this PhD, engaging in retirement planning can support basic needs as planned activities will be self-endorsed and chosen (autonomy support), planning facilitates goal-setting and accomplishment (competence support) and encourages participation in social activities, which can indirectly support relatedness. As a result, planning can positively contribute to well-being and intrinsic motivation for activities of one's choice which can lead to the development of long-term habits (Deci & Ryan, 2000). Additionally, literature has suggested that satisfaction of basic needs can foster new identity formation through increasing an individual's likelihood of exploring new identity options and deeply endorsing them (Luyckx, Vansteenkiste, Goossens, & Duriez, 2009). Need supportive environments encourage individuals to act in accordance

with their values and feelings and facilitate individuals' inclination towards developing the identities, which represent a better expression of their own selves (Soenens, & Vansteenkiste, 2005). As a result, such identities are more likely to be successfully accepted and established long-term (Luyckx, et al., 2009).

Furthermore, planning for retirement can intentionally and unintentionally lead to increased consideration of PA. Many people believe that PA can help in accomplishing their plans in later life by supporting independence, health, mobility, activities of daily living (Arnautovska, O'Callaghan, & Hamilton, 2017; Träff, Cedersund, & Nord, 2017). Therefore, in retirement planning, PA might be considered as an important tool to support future goals instead of being viewed as an ultimate goal, the latter can be discouraging for some people (Costello, Kafchinski, Vrazel, & Sullivan, 2011). Individuals might be more motivated to initiate and maintain PA if it becomes integrated in their own plan consistent with their values and priorities (Deci & Ryan, 2000).

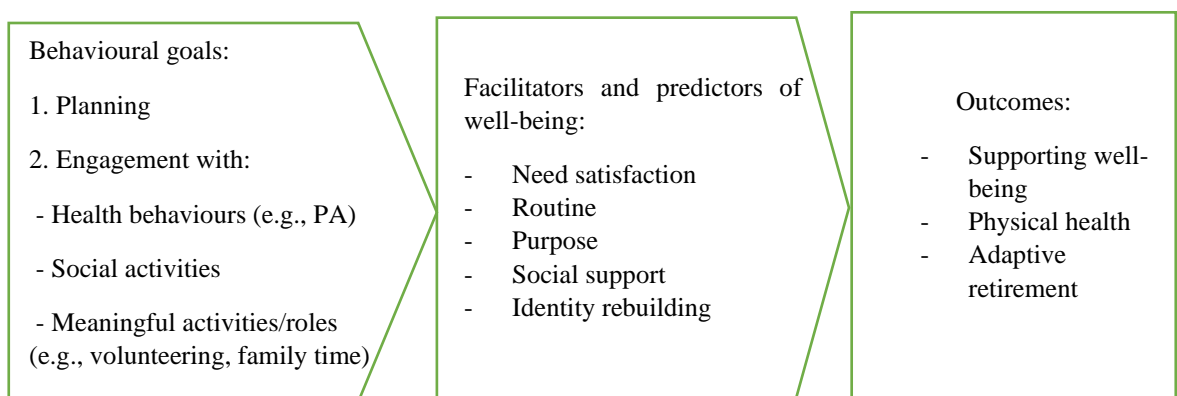
Additionally, lifestyle planning for retirement can inspire individuals to be more active in more sustainable ways that are integrated into their daily routines (Lally & Gardner, 2013). Including more activities of daily living (e.g., looking after grandchildren, walking to a social club, gardening), encourages movements with the downstream benefits of more PA, for example increased fitness levels, social engagement, and quality of life. These more routine ways to create PA habits may be easier to maintain (Ashe et al., 2015), which can be particularly relevant to individuals with the lack of intentions to actively participate in PA after their retirement.

Overall, lifestyle planning for retirement and subsequent engagement with health behaviours such as PA, social and other meaningful activities can facilitate retirement

adjustment through the provision of need satisfaction, a new routine, sense of purpose after retirement, social support, and identity rebuilding. Importantly, planned activities selected in accordance with one's own preferences have a higher chance to become a habit. As a result, retirement lifestyle planning can support an individual's well-being during the retirement transition, satisfaction with retirement but also positively contribute to physical health and well-being of older adults through encouraging healthy routines (Figure 5.1). As such, the purpose of the present research was to develop a planning initiative for supporting well-being and health of retired adults.

Figure 5.1

Mechanism of a retirement planning intervention



5.1.3 Existing Interventions to Support Retirement Transition

In recent years several reports and reviews of interventions that aim to improve physical and psychological health in retirement have revealed a lack of evidence regarding the effectiveness of interventions in changing behaviours or promoting health and well-being during retirement transition (e.g., Baxter et al., 2016; Heaven et al., 2013; Lara et al., 2014; Rodríguez-Monforte et al., 2020). Overall, there is limited research that has specifically focused on recent retirees or those approaching retirement (Rodríguez-Monforte et al., 2020). For example, Baxter et al. (2016) identified only one PA

intervention that was specifically tailored to recent retirees, which did not have any significant long-term effects on health behaviours.

Furthermore, existing experimental studies that targeted retirement transition often recruited participants with varied retirement durations (e.g., retired less than six years ago; Lapierre, Dubé, Bouffard, & Alain, 2007; retired less than six months ago; Werkman et al., 2010). Some studies also selected samples based on age (e.g., 55-70 years; Ashe et al., 2015), however this research might not only include individuals in the transition to retirement. The effects of lifestyle interventions might vary greatly between those retirees with already established routines (i.e., retired for a long time) and those currently experiencing the retirement transition, having heightened intentions to adopt new habits, and searching for new activities and roles (Rodríguez-Monforte et al., 2020).

A further concern of existing interventions is a lack of theoretical basis informing intervention design and delivery. Only two thirds of PA initiatives identified by Baxter and colleagues (2016) used psychological theories to inform the designs. Heaven and colleagues' (2013) review reported that only four of seven studies that aimed to promote meaningful social roles in retirement were informed explicitly by theoretical concepts or models. In the absence of a theoretical basis, it is challenging to identify the determinants of a particular behaviour, and subsequently appropriate methods for changing this behaviour, which can compromise the effectiveness of interventions (Lycett et al., 2018). Furthermore, the lack of theoretical mechanism limits our understanding on the intervention effectiveness or lack thereof, which makes it more difficult to improve the design or replicate the experiments results (Jennings et al., 2019).

Another criticism relevant to the design of many retirement interventions is that they fail to consider socioeconomic, demographic and other contextual factors, which

can impact the effectiveness of an intervention in ‘real-life’ settings (Rodríguez-Monforte et al., 2020). Health programmes risk being ineffective for people from different socio-economic backgrounds by not accounting for various characteristics such as literacy level, cultural diversity, prior health and lifestyle, access to resources and local facilities (Coupe, Cotterill, & Peters, 2018). One way to understand the real needs of the diverse population, as well as barriers and facilitators for intervention implementation in a given setting, is to include the target population and public health practitioners in the intervention design (O’Brien et al., 2016). However, Rodríguez-Monforte and colleagues (2020) noted that the design of most studies did not integrate already available local resources (e.g., city councils, civil associations, etc.) nor consultation with the potential users of the interventions, thus jeopardizing its sustainability, feasibility, and acceptance by the implementors and target population.

Other limitations of the existing initiatives included selection bias (e.g., former employers from the same sector or companies), lack of or unreliable evaluation measures, and the absence of testing on the interventions’ feasibility (Barnett, van Sluijs, & Ogilvie, 2012; Heaven et al., 2013). Some authors have argued that the described limitations are caused by the absence of systematic approach to intervention development (Lara et al., 2016; Rodríguez-Monforte et al., 2020), which would help to ensure that all the important steps (i.e., choosing a theoretical mechanism, consultation with stakeholders) are met. Lack of intervention development protocol also makes the evaluation and comparison of the interventions design and outcomes more challenging (Gitlin & Czaja, 2015).

The present research will attend to the identified criticisms in current intervention design: lack of theoretical mechanism, failure to consider local settings and contextual factors for intervention implementation, and the absence of a systematic approach in

intervention development. Specifically, the intervention will utilise theoretically- and evidence- informed methods, research will engage relevant stakeholders in the intervention design and evaluation and follow the intervention development protocol. The following introduction will discuss best practice regarding intervention development and evaluation and the design and implementation of co-design workshops.

5.1.4 Design and Implementation of Interventions

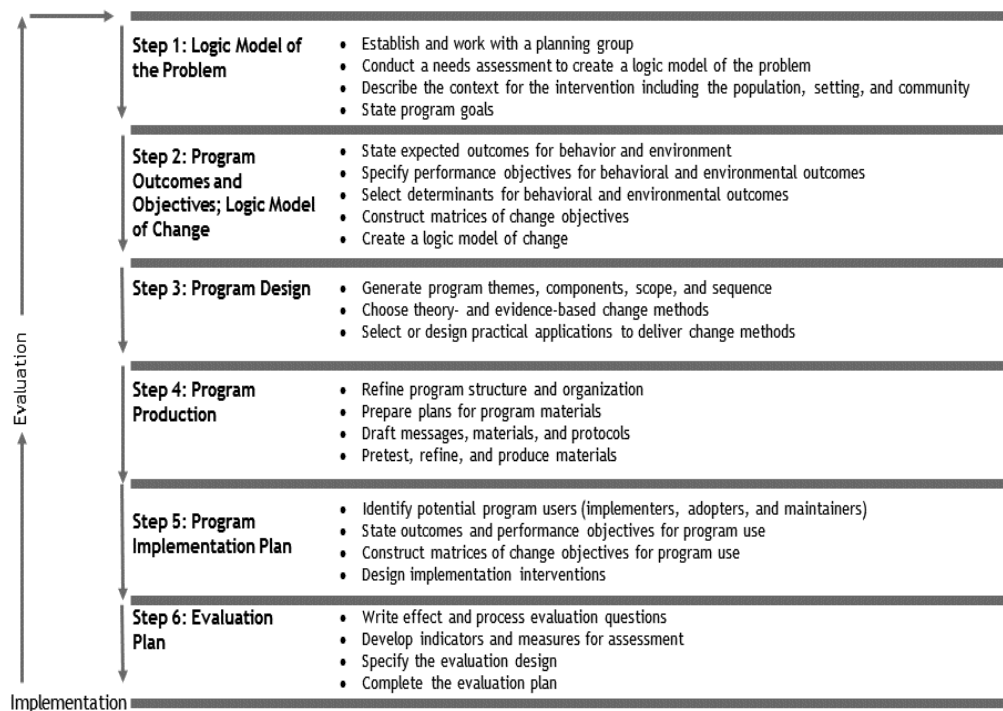
In recent years the process of design and implementation of health interventions has received research attention with the aim of maximising the chances for developing effective, feasible, acceptable, and sustainable interventions. As a result, numerous strategic approaches to design interventions have been developed, for example Intervention Mapping (IM; Bartholomew et al, 2006), Medical Research Council (MRC) Guidance (Craig et al., 2008), and the Behaviour Change Wheel (Michie, Atkins, & West, 2014). Whilst these different approaches to intervention development have the same goal, that is to promote positive outcomes based on the implementation of an effective and feasible intervention, they vary in terms of the intentions of the interventions (e.g., behaviour change such as PA uptake, adherence to medication), contexts they were produced for, for example for public health (Multiphase Optimization Strategy; Collins, Murphy, & Strecher, 2007) or clinical research (Theoretical Domains Framework; French et al., 2012; Patient Decision Aids; Coulter et al., 2013), resources and expertise needed for implementation. Central to most approaches to intervention development are key stages, specifically: 1) conception and planning, 2) designing and creating, and 3) refining, documenting and planning for future evaluation (O’Cathain, Croot, Duncan, et al., 2019; O’Cathain, Croot, Sworn, et al., 2019).

One of the most comprehensive and rigorous approaches for developing interventions is IM (Wight, Wimbush, Jepson, & Doi, 2016). Intervention mapping provides a detailed description of its steps that have been widely used in health interventions (Hansen, Kanning, Lauer, Steinacker, Schlicht, 2017). It is posited, IM can be useful for designing an intervention for the retirement transition. One of the advantages of IM is incorporating a theory-based and evidence-based approach for intervention design (Bartholomew, Parcel, Kok, & Gottlieb, 2006). Furthermore, IM promotes engagement of the stakeholders in the process of intervention design, which can enhance feasibility of the intervention. Additionally, going through the stages of IM allows for interaction between different personal and environmental factors to be taken into account, which is particularly important for designing an intervention for retired people with their complex needs, circumstances, and behaviours.

In accordance with IM, there are six steps for planning, implementation and evaluation of interventions (Figure 5.2). The brief description of each step will be provided below.

Figure 5.2

The six steps of Intervention Mapping



Note. Summary of the six steps of Intervention Mapping. Reprinted from *Planning Health Promotion Programs: an Intervention Mapping Approach*, by L. K. Bartholomew, 2006, Jossey-Bass.

Step 1: Logic Model of the Problem. Step 1 begins before planning an intervention and involves the assessment of the health problem, associated behaviours, and environmental conditions. This assessment involves two components: 1) a scientific, epidemiological assessment of the problem and its determinants, and 2) social perspective of the target group on its problem, an attempt to understand the character of the group and its members. To better understand the perspectives of the target group, it is recommended to actively engage and communicate with its members, for example through interviews or planning groups. The outcome of this first step includes a description of a problem, its impact on quality of life, its behavioural and environmental determinants and causes.

Step 2: Program Outcomes and Objectives – Logic Model of Change. Step 2 explains the basis for the intervention by specifying who and what will change as a result of the intervention. The product of Step 2 is the logic model of change, which represents pathways for intervention effects. These pathways include health and quality of life outcomes to be achieved by the intervention, performance objectives for the outcomes, and personal and environmental changes that are necessary for achieving these desired outcomes.

Step 3: Programme Design. Step 3 involves selection of theory-informed methods for changing health behaviours of individuals and target groups. This step also involves generating the intervention components, scope, and sequence, as well as selecting or designing practical applications to deliver change methods.

Step 4: Programme Production. Step 4 involves a detailed description of the scope and sequence of the components of the intervention, programme materials and protocols, careful reconsideration of the intended intervention context and participants. This step also includes active consultation and/or pilot testing of the intervention strategies and materials with intended implementers and recipients.

Step 5: Programme Implementation Plan. Step 5 focuses on planning for adoption, implementation, and sustainability of the programme in real-life contexts. The aim of this step is to ensure that the programme designed in the previous steps will be utilised and maintained over time, for as long as it is needed. The outcome of this step is a detailed plan for accomplishing programme adoption and implementation by defining settings, resources, programme users and supporters, roles and needs for adapters and implementers of the programme.

Step 6: Evaluation. Step 6 is evaluation of the process and outcomes of the intervention, which can include the analysis of the change in health and quality of life problems, behaviours, environments, and determinants of performance objectives. This step involves processing evaluation questions, developing indicators and measures for assessment, specifying the evaluation design, and completing the evaluation plan.

In sum, IM was selected as the guide for developing planning intervention for retirement transition due to the comprehensiveness of IM approach, detailed description of each step, prioritising theory-based methods, and focus on the interaction between individual and contextual factors. Importantly, IM acknowledges the crucial role of stakeholders in the processes of designing, refining, and evaluation of interventions, which can be particularly relevant for developing a feasible intervention for retirement transition.

5.1.5 Engaging Stakeholders in Intervention Design

Health and social care research and governing bodies advocate the use of stakeholders in the design and development of novel health interventions (Concannon et al., 2012; Oliver et al., 2004). Within health research and practice, the term ‘stakeholders’ incorporates the ‘public’ and those served or affected by a programme or intervention, along with those involved in programme implementation and those who intend to use the results (i.e., commissioners) (Morton et al., 2017). Stakeholders should have relevant knowledge of the population’s needs, contextual factors, potential barriers and resources for implementing interventions in the given settings (Gregory, Atkins, Midgley, & Hodgson, 2020). Therefore, stakeholders’ involvement has a potential to address the common problem – a gap between research and practice by ensuring that the intervention is relevant to the specific context, implementable, and useful for groups who have direct

interest in it, that is, future users and practitioners (Greenhalgh, Jackson, Shaw, & Janamian, 2016). Importantly, knowledge and opinions exchanged in the mixed group of policy makers, and researchers as co-designers, help to better identify health issues and produce more creative and richer solutions (O'Brien et al., 2016). In addition, engaging potential users in the process of intervention development increases the sense of ownership and acceptance by the target population (Owens et al., 2011). As a result, potential interventions have higher chances to be translated in policy and practice and to be effective in 'real-life' settings (Staley, 2009).

The present study aimed to collaboratively develop an intervention with stakeholders including: i) academics with the expertise in older population, behaviour change, and PA; ii) experts from third-sector organisations, sport organisations, and businesses focusing on older people; public health practitioners; and iii) the target population - retired adults or those approaching retirement. In accordance with IM recommendations, the stakeholders were involved in several stages of the intervention development. In particular, retirees were engaged in the processes of need assessment and intervention evaluation, whereas academics and experts with relevant knowledge and experiences with health promotion, ageing population, and retirement participated in the intervention design and implementation planning.

The intervention development followed steps 1-4 of IM, which included need assessment, creating logic model of change, selecting intervention methods, and intervention production. Steps 5 and 6, which involve intervention implementation and evaluation were not implemented in the present research.

5.2 Intervention Development

5.2.1 Step One. Need Assessment

Need assessment represents a detailed understanding of the health problem, its determinants, associated behaviours, and the perspectives of the target population. Need assessment was implemented in the first two years of this PhD and involved the literature review for the thesis (Chapter 1), and studies one to three (Chapter 2-4). The literature review discussed health and well-being issues associated with the ageing population and retirement, existing retirement and ageing theories and frameworks (pp. 8-19). The literature review also introduced SDT and discussed how need satisfaction might explain changes in well-being after retirement thus positing a universal underlying mechanism for retirement adjustment.

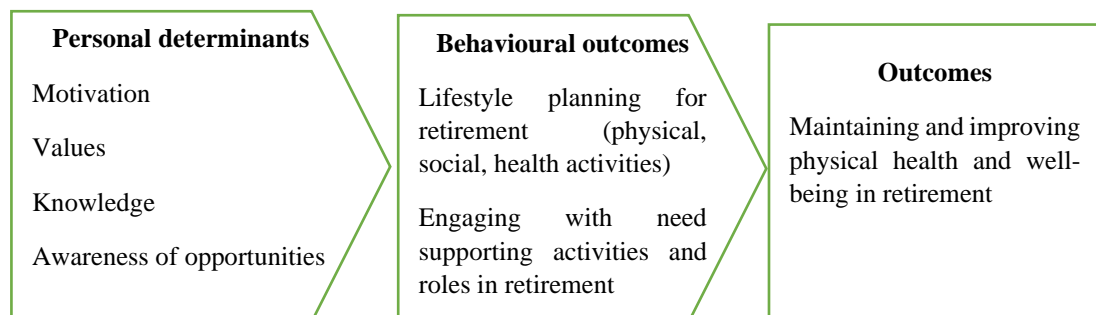
Chapters 2-4 provided empirical data on well-being and health determinants in the retired population, retired people's needs and perspectives. Particularly, Chapter 2 suggested that need satisfaction can explain changes in well-being during retirement adjustment, specifically, greater need satisfaction is associated with increased well-being. Chapter 4 identified key components of retirement adjustment and their interplay through the lived experiences of the target population. Those findings helped to profile the retired population and suggested ways to maintain or improve well-being and promote healthy habits during retirement transition, in particular by providing need support, facilitating identity reconstruction, social connectedness and independence, increasing PA levels through various activities, such as exercising, social clubs, education, and travelling.

5.2.2 Step Two. Logic Model of Change

The next stage involves the development of a logic model of change, which includes the expected outcomes that need to be achieved with the planning intervention, objectives for changes in the behaviours of the retired population, and personal determinants for the behavioural outcomes (Figure 5.3). Personal determinants and objectives for changes were selected based on the literature review (e.g., Hardcastle et al., 2015; Yeung & Zhou, 2017), results of the focus groups and interviews with retired individuals (Chapter 4), and relevance to the intervention outcomes (De Craemer et al., 2014). The presented logic model of change (Figure 5.3) postulates that personal determinants such as motivation, values (e.g., for independence and active life in retirement), knowledge of how to achieve and maintain desirable future as well as awareness of opportunities for active lifestyle could be used to encourage individuals going through the retirement transition to plan for health, physical, and social activities, and subsequently engage with the chosen activities and roles. This, in turn, would help to facilitate an active lifestyle, maintain or improve health, well-being in retirement, and increase satisfaction with retirement.

Figure 5.3

Logic model of change in the target population



Note. Outcomes are goals for health and quality of life to be achieved by the intervention. Behavioural outcomes include changes in the behaviours that are

necessary for achieving health and quality of life outcomes. Personal determinants are the factors that are associated with the performance of the behaviours, for example cognitive factors and capabilities. These factors can be changed or influenced by interventions in order to change the targeted behaviours (Bartholomew et al., 2006).

5.2.3 Step three. Selecting Intervention Methods

Changing health behaviours in the retired population can be particularly challenging, as retired people significantly vary in their health status, backgrounds, life histories, personal needs and preferences (Brawley, Rejeski, & King, 2003; Kobayashi, Wardle, & von Wagner, 2015). Therefore, health initiatives for retired adults should be tailored to individual needs (Lara et al., 2016) and take into account personal factors such as self-perceptions. For example, recent retirement research suggested behaviour change interventions informed by possible selves, which is a type of future-oriented self-representation (Perras, Strachan, Fortier & Dufault, 2016).

Possible selves represent future-oriented images which derive from the thoughts people have about their future and their potential associated with specific roles (Markus & Nurius, 1986). Consideration of possible future selves might help with rebuilding identity (Hoyle & Sherrill, 2006; Markus & Nurius, 1986), which can be especially beneficial during the retirement transition (Perras et al., 2016). Importantly, the image of a desirable future is based on an individual's personally endorsed values and interests, which are essential for developing intrinsic motivation and supporting basic needs (Ryan & Deci, 2000). A positive possible image of one's self can serve as a goal to encourage more detailed planning for actions in order to achieve it (Bailey, 2019). Furthermore, considering and planning for future selves can help setting more realistic expectations of

retirement (Topa et al., 2009). Therefore, possible selves can work as a purpose, guidance, and motivation for a change (Perras et al., 2016).

Evidence has demonstrated that encouraging thinking about possible selves associated with certain behaviours such as PA identity can be effective in promoting healthy habits among students (Ouellette, Hessling, Gibbons, Reis-Bergan, & Gerrard, 2005) and adults aged 18-64 (Strachan, Marcotte, Giller, Brunet, & Schellenberg, 2017). However, Perras et al. (2016) evidenced that a possible selves intervention was not associated with the development of a PA identity or positive PA behaviour. One limitation of Perras et al.'s possible selves intervention is that the sole focus on PA identities as a physically active future self might not be every retiree's desired future image. Physical activity might not be seen particularly valuable by some people, and thus would discourage them from engaging fully in the task. It is possible, however, that maintaining or increasing PA level could be a part of more holistic desirable future image such as maintaining mobility and independence (Rogers & Mitzner, 2017).

Additionally, a fundamental flaw in this approach suggested by Perras and colleagues (2016) was the lack of steps on how to achieve future selves. One way to improve the effectiveness of possible selves interventions might be to include more detailed planning on how to achieve the desirable images, for example deciding what activities and roles would be beneficial. Importantly, selecting possible selves and planning steps in accordance with one's own personal values can help to support basic needs, intrinsic motivation for new activities and behaviours, and subsequently rebuild one's identity (Luyckx et al., 2009). As such, possible selves and planning were selected as two main components for the retirement transition intervention, which is described in the following section.

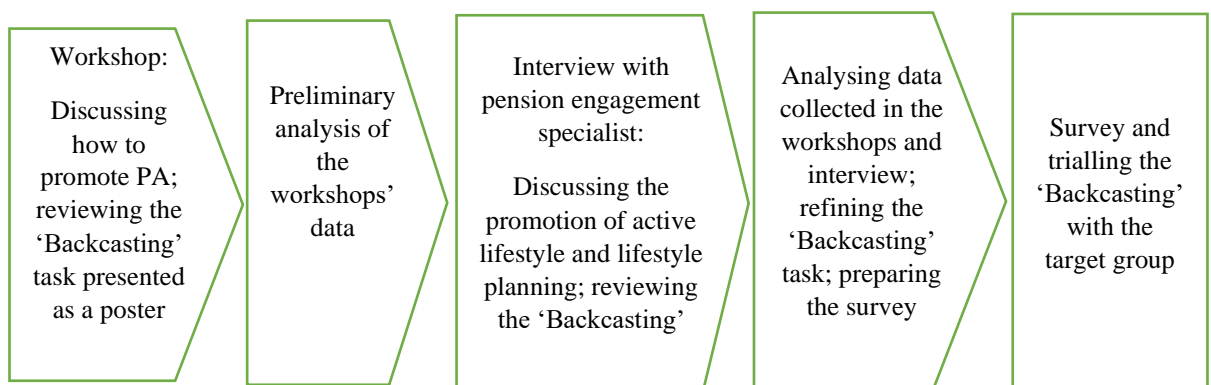
5.2.4 Step Four. Intervention Production

Next step of IM is producing, refining, and further developing the intervention components and involves consulting with potential implementors and recipients of the intervention, and intervention trialling (Bartholomew et al., 2006). Therefore, the next stage of the intervention development in the present research included collaborative work with stakeholders, experts with relevant knowledge and experiences, and the target population – individuals experiencing retirement transition.

First, codesign workshops with the experts and stakeholders working in the fields of health promotion, PA, and ageing population and an interview with a Pension Communications and Engagement consultant were conducted. Experts and stakeholders discussed issues associated with promoting healthy lifestyles in retirees, reviewed existing health promotion initiatives for the target population and a prototype planning intervention, suggested ideas to increase active lifestyle in the target population within different settings, and the approaches for interventions implementation. Following these consultations, the prototype planning intervention was refined and presented to the members of the target population. Individuals going through retirement transition trialled and assessed the planning intervention through an online survey (Figure 5.4).

Figure 5.4

Intervention production steps



The following section will describe the methods and results of the co-design process with the experts and stakeholders.

5.2.5 Codesign: Methods 1

i Participants

Participants were identified and purposefully sampled based on their expertise ($N = 20$). A total of ten stakeholders and experts with the knowledge of ageing populations, behaviour change, public health, and/or health interventions and initiatives agreed to take part in a co-design workshop. Participants included academics with expertise in health psychology, behaviour change interventions, or/and ageing population ($n = 5$); stakeholders from local councils ($n = 2$); professionals from voluntary organisation supporting people over the age of 50 ($n = 2$); and an individual working for a local sports organisation providing support for older population ($n = 1$; see Table 5.1 for an overview of participants). To accommodate the participants' schedules, three face-to-face workshops were conducted, and one academic attended the workshop electronically. Each workshop comprised of 3-4 participants with mixed occupational backgrounds (see Table 5.1). All sessions were facilitated by me. The importance of pre-retirement planning emerged from the data collected in the workshops, and therefore it was decided to have a separate interview with a specialist in pre-retirement planning in order to get their insights on the promotion of lifestyle planning during the retirement transition.

The study was approved by the Institutional Ethics Board and all participants provided consent prior to participation.

Table 5.1

Participant information

Workshop №	Occupational backgrounds	Expertise
Workshop 1 (WS1)	Two academics (A1, A2), one professional from the city council (CC1)	Ageing population, public health, local initiatives, behaviour change, PA
Workshop 2 (WS2)	Two academics (A1, A2*), two professionals from voluntary organisation (V1, V2)	Ageing population, local initiatives, behaviour change, PA
Workshop 3 (WS3)	One academic (A1), one professional from the city council (CC), One stakeholder from the sport organisation (SO1)	Ageing population, public health, behaviour change, PA, local initiatives
Interview (I)	One pension communications and engagement consultant	Pensions, financial planning for retirement

Note. * indicates that the participant attended the meeting electronically.

ii Procedures

The workshops were conducted in meeting rooms on the university campus. Each workshop followed the same general structure; however, discussion and specific topics were guided by the participants. Each workshop lasted approximately 1.5 hours. To ensure rigour and trustworthiness of findings, the workshops comprised of experts with the knowledge and experience in different occupations (e.g., academia, voluntary organisations). All participants read the Information Sheet (Appendix 6.T) and provided

informed consent (Appendix 6.U) before participation. During the workshops, a semi structured question guide was followed, however open discussions between the participants were encouraged with prompt questions being asked to obtain richer and more nuanced data (Tracy, 2010). During the discussion, participants were encouraged to take notes. All discussions were audio-recorded, transcribed verbatim, and anonymised. At the end of each workshop, the principal investigator also collected any notes written by the participants which were also used in the analysis.

The workshops started with a short presentation by myself as the principal researcher. The presentation provided an overview of previous research findings (from this PhD and wider research) that explained the rationale for intervening during the retirement transition and an introduction to the purpose of the session, that is, to support individuals going through retirement transition and promote an active lifestyle (see Appendix 6.V for session slides). The first part of the workshops aimed to collect the experts' views on the existing ways to promote PA during retirement transition, why the existing initiatives can be effective or not. Participants were then asked to review examples of existing PA initiatives for older adults and retirement (see Appendix 6.W). In addition to these existing materials, participants were also presented with a prototype of a 'Backcasting' intervention (Appendix 6.X; see section iii below for a full description), which aims to promote lifestyle planning for retirement. The 'Backcasting' was developed by the research team in line with previous research. Participants provided their feedback on the materials via post-it notes and a group discussion that lasted approximately 20-25 minutes.

The second section of the workshop involved discussion on approaches for promoting active lifestyles, health and well-being, the methods for delivering interventions that are relevant, feasible in real-life settings, and able to address needs of

people from different backgrounds. Participants were asked to discuss how best to address the promotion of an active lifestyle in the target population for approximately 25-30 minutes. Some example questions were provided to initiate discussion, for example, how to promote an active lifestyle, when is the best time for it, and how to overcome the barriers preventing retired people from being physically active (Appendix 6.U, slide 8). For each task, before the group discussions, the stakeholders were encouraged to take some time (approximately 5-7 minutes) to think about the ideas and write them down on the post-it notes provided (Appendix 6.Y).

After the workshops, data were preliminary analysed, thematic analysis was applied. Based on the identified themes, a semi-structured interview guide (Appendix 6.Z) was developed for the interview with the pension engagement consultant. The questions concerned the pension expert's experience of providing consultations for people approaching retirement, her opinion about health and social activities planning pre-retirement, and the methods for implementing planning initiatives, ways to engage people in lifestyle planning, and the feedback on the presented 'Backcasting' prototype (Appendix 6.AA). The individual interview took place in a local coffee shop. The interview was audio-recorded, transcribed verbatim, and anonymised (pseudonym: Sarah). The interview lasted approximately one hour.

iii The Prototype 'Backcasting' Intervention

As in accordance with IM, the 'Backcasting' intervention methods were selected after reviewing existing literature on retirement adjustment and behaviour change techniques, and subsequently presented to the experts for the review. The 'Backcasting' intervention originated from the 'Backcasting' planning method, which encourages individuals to think about a desirable future or a goal first and then moves backwards to identify steps and actions that would connect this future image with the present (Robinson, 1988). The

‘Backcasting’ method became the basis for the intervention task, which consists of two main steps: 1) ‘Future Me’ and 2) ‘Steps needed to become ideal future me’. Poster explaining the ‘Backcasting’ task was created and can be found in the supplement materials (Appendix 6.AA).

1) Future Me.

The first step asks participants to think about their ideal future selves, that they would like to achieve or maintain in the next fifteen to twenty years. The participants are encouraged to think about positive images such as ‘being active, independent’ or ‘staying connected with friends and families’ and explore a range of different options.

2) Steps needed to become ideal future me.

The second step asks participants to plan the steps needed to achieve their ideal future selves. Intervention users are encouraged to consider the activities they would like to engage with, when and where they could do them, and who they would do them with. It is explained that all the choices should be enjoyable for users. The intervention task also involves thinking about how to look for available opportunities.

The prototype for the intervention was presented to the participants as a poster that explained the task to explore the experts’ views about promoting an active lifestyle in retirement as a part of planning for future selves.

iv Data Analysis

Thematic analysis was used to analyse the transcripts and collected notes. The data were coded across the components of potential interventions (Jessup, Osborne, Buchbinder & Beauchamp, 2018; O’Brien et al, 2016), such as when and who should implement the initiatives, how to promote the idea of being active in the target population, what type of activities to promote. A separate theme captured the feedback on the prototype

‘Backcasting’ intervention. Nvivo 12 software was used to assist in the analysis process (Bazely & Jackson, 2013).

The data were coded by the principal investigator. To ensure credibility of the analysis, a process of member checking was used as all transcripts were seen by a member of the supervisory team who provided their reflection and feedback on the developed themes. This process facilitated further exploration and interpretation of the collected data (Smith & McGannon, 2018).

5.2.6 Codesign: Results 1

The generated ideas were grouped across predefined themes – components of the potential interventions for promoting healthy retirement, and feedback on the prototype ‘Backcasting’ intervention.

i When, where and who should promote health activities/active lifestyle?

Participants almost unanimously felt that “the sooner is better” should be the approach for promoting health activities to people approaching retirement. The workshops’ attendees advocated for planning social and physical activities alongside with financial planning, something that is much more commonplace in retirement planning.

Organisations that offer those types of information, workshops etc, to help people with that transition, not just traditional kind of trying to help you with your pension. But also getting people in the mind-set about what is your plan going to be once you retired and what options might be available to you, what hobbies you may like to pursue. I think these businesses certainly support people through that transition. (WS1, A1)

The participants suggested that employers might play an important role in encouraging their employees to plan for health and social activities after retirement. It was noted that

if information about the importance of lifestyle planning would come from employers or planning consultancies as opposed to healthcare professionals, that would be better perceived by many people approaching retirement.

If it's your employer who says: "You're fifty, you're fifteen, seventeen, twenty years away from retirement. What are you thinking? What are you planning? Have you thought about [retirement]?" That's because the less engaged, particularly don't like being told by the NHS what to think and do. (WS2, V2)

In addition, workshop three participants suggested that the promotion of an active lifestyle could be incorporated into financial planning for retirement, for example considering walking or cycling as a cheaper alternative to buying petrol and paying for parking spaces. The interviewed pension engagement consultant also agreed that for many people approaching retirement, financial planning was the priority and appeared to be the main motivation for attending her retirement planning sessions. "Lifestyle discussions take up to one third of the sessions, and the rest is more financial" (I). From the Sarah's perspective, financial planning and lifestyle are closely related. Deciding on what activities people would like to do after retirement influences the choices "when to retire" and "how much money" is needed, but one's financial conditions also affect their post-retirement lifestyle planning. "The way I structure the sessions is I do the lifestyle bit first because then it rolls into 'Can you afford to do what you wanna do?' And then it rolls into financial" (I).

There were mixed opinions regarding the role of the NHS in promoting information about active lifestyle and available facilities. Participants in workshop three were against the engagement of healthcare sector as they thought it can be seen as prescribing, authoritative and therefore discouraging for a lot of people: "Because this,

like this perception that they're watching what you're doing" (WS3, A1). In contrast, the participants in workshop two suggested using GP surgeries for health promotion in the target population, for example introducing display screens at GP surgeries to identify and engage less active people. However, there was a concern that as many people do not frequently visit their GPs, they will not be able to benefit from such screening. Alternatively, the voluntary workers from workshop two suggested using local pharmacies as a place where information about the benefits of an active lifestyle and local opportunities could be distributed: "And if the community pharmacists had the will, then they could get those messages across really easily" (WS2, V1).

Additionally, whilst participants felt promoting health behaviours before retirement was important, it was also agreed that health promotion initiatives and support should be available for people after retirement as well in order to maintain healthy habits. "Opportunities at different levels post-retirement as well giving that on-going advice, information to make sure that people don't suddenly feel: 'Oh, there is nothing out there that suits me or nothing that I could probably enjoy'" (WS1, A1).

Some participants also noted that unless people actively look for the information on what they can do in their retirement, it is not easily available. For example, one of the experts reflected on her own experience of accidentally discovering a discount for older age group in her local swimming pool.

First financial benefit of ageing. But nobody had sent me any information about that. There was nothing. For example, the council sends me my community charge every year. They know how old I am but there is nothing comes through sort of general means of communication that might say: "Now you're approaching this age. Do you know you can get dot-dot-dot?" It feels like there

is not just lack of targeting but almost kind of if you bumble across it or find it on a website because you're actively looking for something, then you will find it and there's loads of good stuff there. But if you not, you won't. (V1, WS2)

The pension engagement consultant also noted that one of the barriers for limited awareness about available opportunities for exercising, socialising, or hobbies among her clients was a lack of Internet and IT literacy. The emerging theme was the need to widely promote the existing facilities that already are "out there" through various means. As one of the potential solutions, it was suggested that communities and local third-sector organisations could play a leading role in promoting active lifestyle after retirement and distributing information about available opportunities. Participants proposed involving community champions, active people from local communities who are willing to interact with others and share their positive experiences. Among the discussed benefits of using such approach were increased social connectedness within the communities, an opportunity to involve hard-to-reach people, and increased confidence in people about their ability to develop healthy habits: "If you see someone that's quite similar to yourself and you can see that they can do it. 'Oh, I can do that as well'" (WS1, A2).

It was also suggested that the information messages should be in "places where people will see them" (WS2, V2). The commonly supported idea in terms of "who can promote local opportunities for PA" was to involve people who work in local settings such as barbers, pubs, or corner shops. The participants noted that such people are normally well-known and trusted, and importantly they know their community and can potentially identify and engage more vulnerable groups, for example lonely or socially isolated people.

ii How to advertise?

Across all three workshops, participants identified some limitations of advertising health benefits of active retirement, for example many people found health messages very ‘paternalistic’, or associated them with medical services, and thus would not view them as particularly encouraging, especially if negative images around health and body are presented.

Getting rid of flabby arms, like sorting out your doggy tummy...It’s just so negative and sort of based on this body appearance issues, which I guess might work for some. But I just don’t think it’s particularly inspiring and engaging for people who just start to become active. (WS2, A2)

The participants felt that an active lifestyle should be promoted using other means for example, advertising social gains, “selling physical activity as a real social benefit as well” (WS1, A1). Some discussed that the advertised benefits should be more related to well-being and quality of life, for example maintaining mobility, autonomy and independence, and maximising meaningful life. “It is almost about, how do we have that sense of well-being and optimum quality of life? And I think it’s very good: ‘Get ready! Start moving! Keep going!’” (WS1, A1). It was also suggested that individuals might respond to promotion campaigns better if the outcomes are more immediate and tangible, such as reducing physical pain, having a more tangible purpose in the activity (e.g., gardening, volunteering), increasing social interaction or enjoyment as a result of the activity. “It’s a nice, easy to understand, striking headline really. You know, you’re gonna see that and you know what it is straight away” (WS1, CC1).

The importance of promoting the enjoyment component as a part of healthy activities was a prominent theme across all the three workshops. “A very important point, which is about enjoyment. Coz essentially all these main principles of maintaining

behaviour is that you actually enjoyed it” (WS1, A2). Some participants suggested to “sell” PA to the target population by combining exercising with popular enjoyable activities, for example Bingo or pub quizzes, or through well-known and respected brands such as sport clubs that people would want to associate themselves with. Furthermore, among the ideas was to use incentives that would attract people’s attention (e.g., coming to the introduction session for a free cake or entertainment), maintain interest in activity (e.g., using apps that would give incentives for a number of walked steps), or overcome barriers to exercising (e.g., offering childcare while exercising for those looking after younger family members).

Another prevalent theme was around the use of simple and ‘gentle’ messages (e.g., “Start moving! Keep going!”) and images that for example would demonstrate light to moderate activities as opposed to intensive exercising. Specifically, gentle messaging was viewed as a key approach for non-active people. Participants suggested that pictures of rigorous exercising sessions or too competitive sports can only discourage those people who already lack confidence and fitness level. “Some happy people running on a treadmill...For those who are not sure what they’re doing, ‘Can I make it? Or maybe I will look stupid. I may gonna drop out’” (WS2, A2). The stakeholders also discussed that to increase interest in health promotion initiatives, minimum commitment should be required from the target population, particularly during the stage of initiating activity through offering free taster sessions, no need to book the sessions or have a membership, an opportunity to just “come and have a quick look” (WS3, SO1).

Similar to the participants in the workshops, Sarah (I) highlighted the importance of using appropriate language and a more ‘subtle’ way for promoting active lifestyles after retirement. For example, in her sessions, Sarah did not focus on health benefits as “some people really enjoy those but some people don’t”. Instead, her consultations cover other

less health-specific aspects of retirement planning such as social engagement after retirement, active lifestyle in general, intellectual activities, and hobbies. In line with one of the participants from the workshop (WS2, A2), Sarah also discussed that people do not like to hear criticism about themselves, “You don’t want to come across as ‘We are all lazy’ or anything like that”. As an alternative approach, the pension consultant suggested to encourage people to focus on how to achieve positive retirement experiences.

iii How to refer to the target population?

The stakeholders and experts criticised some existing initiatives for using the reminders about older age in the titles and slogans as it might be discouraging for many people, “Do people want to be reminded that they are certain age? (WS2, A2)”. It was suggested that even organisations that are associated with older age such as Age UK can put people off. One stakeholder from a voluntary organisation noted that people aged fifty to sixty-five come to their organisation less often than older individuals, as people from the ‘younger’ older age cohort do not think that charities and campaigns focusing on older age are relevant to them. “Anybody who is probably sixty-five plus would see Age Concern as the thing that gonna help them. And anybody fifty to sixty-five has to find out in a much more subtle way about what we do” (WS2, V2). Therefore, it was agreed that either the use of non-age specific titles and slogans or positive framing would be more appealing for the target population. ‘Newcastle Eagles Community Foundation’ was discussed in the workshop three as a non-age specific example, whereas participants in the workshop two recalled ‘U3A’ and ‘Silver surfers’.

And there is something about calling third age that isn’t about ageing older. It’s simply about saying: “You know, you’re not a child, student, and you’re not a working person. You’re now in your third age”, which is a positive framing. And the

other one is Silver Surfers. You know that motion. Because it's just surfing. And I know that surfing the Internet but still Silver Surfer just sounds cool. And it almost sounds like it's possible to grab things. (WS2, V1)

An interesting observation was made across all the three discussions. At the beginning of each workshop, it was explained that the main goal was to develop the intervention for the retirement transition and all the questions referred to those approaching retirement or recently retired. Still, the participants often discussed the ideas with reference to the older population as opposed to those approaching or going through the retirement transition. Therefore, it seems that even the workshops' participants could not disassociate themselves from viewing the target population as older people.

iv What activities to engage with?

One commonly supported approach regarding the choice of activities was that 'one size does not fit all', and this choice always depends on individual needs, abilities, and preferences. It was discussed that before choosing and initiating any activity, it is beneficial for individuals to decide what their motivation and goals are, for example social component or health benefits. Some participants suggested to act on previous life experiences and habits if possible.

And for a lot of individuals, they will see retirement as a real boost and real benefit because all of the sudden they've got all the free time they can pursue all the things that they used to like to do before working, parenting and other things got on their way. (WS1, CC1)

The pension consultant also seemed to strongly support the provision of choice in planning post-retirement lifestyle. In the sessions, she usually asks the attendees to write

down “a three-point plan” with three activities that they want to do, as a starting point for thinking about their retirement.

What we’re trying to do is not telling people what they should do particularly but to try and drop things that they maybe didn’t consider. We talk that “when you retire potentially you’ve got a lot of time, so what are you gonna do with that time? Are you gonna go on holiday? Do you want to have more hobbies?” (I)

It was acknowledged though that due to possible age-related decline and/or long-term inactivity, getting into old PA habits would be problematic. Therefore, most participants advocated for using more moderate exercise versions, for example walk-in football or walk-in basketball. It was noted, however, that different approaches and interventions should be used for people who were still physically active or at least used to have exercising habits in the past compared with those who might have never been active. The participants agreed that the diversity of the target population in terms of their backgrounds, life experiences, and health statuses should be considered. Therefore, one of the suggestions was to assess individuals’ knowledge about health-related activities, their abilities, and motivation before suggesting any activities.

If they don’t necessarily have all the skills, all the knowledge, all the confidence to then get into some PA to pursue because they haven’t done previously or they have been detached for so long then these individuals need a very different approach and a very different type of support to develop in older age. I think the intervention and the approach, they are very depending on the assessment of that individual, their motivation and skills. (WS1, CC1)

The participants also discussed that new health initiatives can be more effective in terms of acceptance and costs if they are developed based on the feedback and exploration of

what people want to and normally engage with. “They were talking to local older people about what they might want. They were then setting up something like Pilates because that’s what people said what they wanted” (WS2, V1). Another suggestion was to create an opportunity for people to gather together, interact, and possibly come up with their own ideas for activities based on the common interests. Both ideas seemed to be more effective for identifying the needs and creating opportunities that would be attractive to retired individuals in the given local settings. The pension engagement consultant also noted the benefits of having group sessions where people can meet, “find common grounds”, and share ideas with each other. “Somebody knows something that somebody else doesn’t know, and they can have a talk about it. And those types of things work quite well, conversing with like-minded people in the same situation, living the same phase”.

The participants also touched upon the impact of people who deliver the activities such as coaches or fitness instructors. For example, the pension consultant advocated for the benefits of providing face-to-face sessions, where consultants can more successfully engage people approaching retirement in planning activities, provide more support to attendees, and answers their questions. Some workshops participants, however, noted that the main motivation for an activity should not be based on the association with specific people. “I’d rather you didn’t like me and you did it because you loved it” (WS3, A1). One of the experts in behaviour change and PA among older adults also shared that “having an exercise buddy was actually associated with lower self-efficacy, a lower PA” (WS1, A2). Therefore, even though the majority supported the benefits of social bonding for initiating new habits, supporting health and well-being, it was concluded that for maintaining a long-term engagement with an activity the main motivator should be the activity itself.

The theme associated with costs of activities also emerged. It was agreed that high costs would discourage most retired people from engaging with a new activity. However, some participants in workshop one reflected on their previous experiences and suggested that people may value free exercise sessions less than the paid activities.

They wouldn't be too concerned about not coming back, whereas if there was initial contribution at least people feel that they're gonna get their money from that, so they were more inclined to stick with it and then naturally see much better outcomes as a result of that as well. (WS1, CC1)

v Backcasting/future selves intervention

During the first task the participants were presented with the poster describing the prototype 'Backcasting' intervention. Overall, the proposed idea received positive feedback. Participants particularly welcomed the focus on future positive images. For example, one expert from workshop two noted, "...if we talk about behaviour change, it feels like we're criticising the current person quite often" (WS2, A2), whereas the 'Backcasting' did not bring this negative message. Other participants suggested that visualising the future can be quite a powerful, effective technique, and that "physically writing something down is more likely to make that pledge" (WS1, CC1).

The choice of images for the 'Backcasting' poster received positive comments, as the pictures demonstrated "light, accessible" activities that people with different fitness and confidence levels can imagine engaging with. Participants also positively evaluated the use of step-by-step planning and the individualised approach in setting goals as the response to the differences in needs and abilities among the target population. Planning one's own goals and actions was viewed as a support for one's autonomy. "The 'Backcasting' one I really like. It's all about reflection and autonomy, and people are thinking about things themselves" (WS2, V1). The pension engagement consultant also

welcomed the idea of giving people the freedom of choice in terms of what activities to do. “You can’t really spoon feed that information. I mean it’s part that everyone is different. Actually, they take more away from that if that’s their own thought process” (I).

However, participants identified one risk associated with the use of future selves – some people could potentially set a negative image instead of the positive future, for example if people are afraid of developing certain health conditions. One expert also noted that for some individuals developing a positive image can be more problematic, for example if they experience a difficult financial or stressful living situation.

I think there would be loads of situations where looking forward is terrifying for some people, not just from the health perspectives, from financial perspectives. Maybe family is moving away. All the kind of images and examples, pretty much comfortable middle class, lovely afternoon tea or holiday I could afford to go on.

I think that kind of approach would have to be very carefully used. (WS2, A2)

Participants in workshop three also noted the complicated language used in the explanation of the intervention and thought that it may be too difficult to understand for members of the general public. Additionally, participants in workshop one suggested to set short-term goals that would be possible to self-monitor in addition to long-term future selves. “That maybe breaking it down to more like smart goals you can achieve and you have. And maybe think about ways how you can self-monitor this and measure progress along the way” (WS1, A2).

Additionally, the pension consultant proposed that in order to make the use of ‘Backcasting’ more effectively, more “creative” approaches for distributing it among the target population are needed. One concern was that people would not be very interested

in trying or even reading about the ‘Backcasting’ if we “give it written down or something like that” (I). Therefore, it was suggested to include the ‘Backcasting’ task in the retirement planning workshops, make and distribute a video film explaining the task, or create an app based on it. For the workshops, Sarah suggested to use it as one of the activities.

We could make it part of an activity like we could ask some of those initial questions. And what they then need to do from the session is to work out how they’re gonna go away and live for that. (I)

Based on the comments of the experts, some amendments were made to the ‘Backcasting’ intervention and its presentation. First, short-term goals (e.g., future self in one year, five years) were added in addition to a ‘long-term’ future self in fifteen-twenty years. Second, the explanation of the task was simplified to make it more understandable for general audience (Appendix 6.Z). Following the pension engagement consultant’s suggestion, an engaging video slides that explained the ‘Backcasting’ task were created (see Appendices 6.AB-6.AC) and presented to people in the retirement transition, who then were asked to complete an evaluation survey. The aim of the survey was to understand whether the developed intervention would be accepted by the potential recipients. The details of this intervention design assessment including methods and results are provided in the following section.

5.2.7 Intervention Design Assessment: Methods 2

i Participants

An opportunistic sample of twenty-four participants ($Mage = 60.42$, $SD = 4.78$, Male = 11, Retired = 11) took part in the study (Table 5.2). Inclusion criteria specified that participants needed to be approaching retirement (still working but aged fifty and over)

or retired from employment for up to two years, as this transition from employment to retirement was proposed to be the most suitable time to engage with retirement planning. Recruitment was conducted through social media, email, and word of mouth. Following departmental ethical approval, all participants read the Information Sheet (Appendix 6.AD) and provided informed consent (Appendix 6.AE) prior to completing the study.

Table 5.2

Sociodemographic characteristics of the survey participants

Gender	Age	Employment/retirement status	Profession	Education
M	63	E	Night Supervisor Hotel	HE
F	65	Other	Wildlife Biologist	HE
M	66	R	Decorator	Q1
M	56	R	Assistant Director: Civil Service	HE
M	61	E	Chief Executive of a Small Charity	HE
F	66	R	Legal Services Support Officer	Q2
M	64	R	Disability Access & Inclusion consultant	HE
F	64	R	Midwife	HE
M	63	R	Headteacher	HE
F	61	E	Social Research Interviewer	HE
F	59	R	Estate Agent	Q2
F	63	R	HCA	NQ
M	68	Other	Supply Teacher	HE
F	56	R	Activity Co-ordinator	HE
F	59	Other	Psychotherapist	HE
M	61	E	Co-ordinating Faith Advisor and Anglican Chaplain	HE
F	62	R	Charity sector director	HE
F	60	E	Accounting Manager	HE
M	66	R	Petrol Station Cashier	HE
F	52	E	French Tutor	HE
F	51	E	Medical Secretary	Q3
M	56	R	Team Leader in Automotive Manufacturing Industry	HE
F	54	E	Customer Services	Q2
M	54		Company owner and Director	HE

Note. F female; M male; R retired; E at employment; HE higher education & professional/vocational equivalents; Q1 qualifications at level 1 and below; Q2 GCSE/O Level grade A*-C, vocational level 2 and equivalents; Q3 A levels, vocational level 3 and equivalents.

ii Research tasks

1. Video slides

The video slideshow created using Microsoft PowerPoint was developed to explain the ‘Backcasting’ task to the target audience. In accordance with the original idea, imagining future positive selves and planning how to achieve them were presented as two main steps of the ‘Backcasting’ task. Two versions of the video slides were developed: one for women that pictured a female future self and activities with predominance of women (Appendix 6.AB), and another version for men – dominated by male characters in the photographs (Appendix 6.AC).

2. Evaluation survey

A survey was developed to collect participants’ feedback on the ‘Backcasting’ task. The survey consisted of two parts: sociodemographic questions (e.g., age, education, occupation) and evaluation of the task (Appendix 6.AF). Evaluation included both quantitative and qualitative questions assessing how participants felt about completing the task, how the task made them feel about retirement (e.g., more confident, anxious), if the instructions were clear and understandable, which parts they found useful or not. Additionally, participants were asked if they had/were planning for their retirement, knew about activities available for retired people and/or how to access information about such facilities.

iii Procedure

Participants received instructions, study materials, and links for the video and the survey via an email (Appendix 6.AG). First participants watched the video slides which detailed the 'Backcasting' task development and purpose, participants then trialled the 'Backcasting' task for themselves.

On completion of the video participants were asked to complete an anonymous online evaluation survey. In addition to the survey, the participants were offered to complete the 'Backcasting' task (the table was provided, see Appendix 6.AH) and return their anonymised completed form, however this was optional as specified in the Participant Information Sheet and instructional email. Eleven participants sent back the completed task. After finishing the survey, participants received the Debrief Information (Appendix 6.AI).

iv Data analysis

Descriptive analyses were performed for the quantitative questions in the survey. Frequencies of the responses to each question were calculated. IBM SPSS Statistics 25 was used to assist in the analyses. For the qualitative questions in the survey and for responses to the 'Backcasting' task, the repeated themes were coded and summarised to determine common perspectives among the participants.

5.2.8 Intervention Design Assessment: Results 2

Quantitative and qualitative responses to the survey questions were divided into four domains: overall feelings, usefulness, instructions, and retirement planning. Quantitative questions had two types of responses: ranging from 1 (*Not at all*) to 5 (*A lot*) (Table 5.3) or *Yes/No* options (Table 5.4).

i Overall feelings

Overall, participants experienced positive feelings about completing the ‘Backcasting’. All participants agreed that the task instructions were clear and understandable with 23 participants (95.8%) finding the task enjoyable to complete (Table 5.3). Participants described their overall feelings about the task as “interesting”, “exciting”, “motivating”.

Eighteen participants (75%) did not feel that the task made them feel anxious, and 21 responders (87.5%) thought ‘Backcasting’ would make people feel more confident about their retirement transition (Table 5.3). One participant admitted that they enjoyed completing the task, however noted that someone in disadvantageous position (e.g., financially insecure, health issues, socially isolated) would feel anxious about planning their future, and therefore the support of a facilitator during the task completion could have been useful for some people.

ii Usefulness

Eighteen participants (75%) found the whole task or aspects of the task particularly useful (Table 5.3). Many participants noted that completing the task gave them more clarity about their goals for the future and more structure in terms of planning how to achieve this future. For some, setting the short-term goals was particularly helpful as a motivation to meet the “deadlines”, the way to monitor the steps and enjoy the feelings of achievement. Several participants also noted that the ‘Backcasting’ allowed flexibility in terms of planning and consideration of different circumstances. Other benefits included the opportunity to think about social and health planning, as opposed to just financial aspect. Additionally, some positively commented on the opportunity to reflect on their goals and expectations, to compare the desirable future and the present situation. However, three participants (12.5%) did not find some parts of the task particularly useful (Table 5.3), particularly there was a concern that the task did not include a

question about financial concerns that might affect planning. Some participants explained that they had already planned their retirement and applied similar ideas before, so completing the task did not add much to it.

iii Retirement planning

Completing the task made 21 participants (87.5%) think more about retirement, 22 (91.7%) responders admitted that they would apply the ‘Backcasting’ for planning their retirement, with 21 participants (87.5%) thinking that completing the task would contribute to positive retirement experiences (Table 5.4). Many felt that completing ‘Backcasting’ would positively impact on their retirement experiences because considering and writing the plan down gave more structure and clarity to their thoughts about their desires and goals for the future, and importantly how to achieve them. When reflecting on planning, some participants indicated that planning for their retirement in advance of leaving employment was beneficial as it gave more time and opportunities to prepare for activities in retirement. Additionally, one participant commented that although planning for active and healthy retirement is important, people also should consider what to do if/when their health deteriorates, for example in terms of activities they would be able to engage with or the place where to live.

Sixteen participants (66.7%) have started planning for their retirement (Table 5.3) but the majority of them shared that they considered predominantly financial planning. Other less prevalent aspects included housing, house duties, travelling, health, exercising, and social life. Also, 16 participants (66.7%) were aware of activities and facilities in their local area to support their desired future (Table 5.3). Such activities included local exercise groups, gym, social groups, local community centres and organisations. Additionally, 14 participants (58.3%) knew how to find information about

available opportunities (Table 5.3), for example through internet, colleagues, word of mouth, family, friends, communities, library, GP surgery, publications, local shops.

Table 5.3

Quantitative feedback on the 'Backcasting' task (Yes/No questions)

	Yes Responses (%)	No Responses (%)	Missing answers (%)
Clear and understandable instructions	24 (100)	-	-
Were there any parts of the task that you did not find useful?	3 (12.5)	21 (87.5)	-
Were there any parts of the task that you found particularly useful?	18 (75)	6 (25)	-
Did you enjoy completing the task?	23 (95.8)	1 (4.2)	-
Did completing the task make you think more about your retirement?	21 (87.5)	3 (12.5)	-
Is this task something you would do to help plan for your retirement?	22 (91.7)	2 (8.3)	-
Did you/are you currently planning for your retirement?	16 (66.7)	7 (29.2)	1 (4.2)
Are you currently aware of any activities/facilities/groups/clubs in your local area that might support you achieving your desired future self?	16 (66.7)	8 (33.3)	-
If you are not aware of any suitable activities/facilities/groups/clubs, do you know how/where you could find this information?	14 (58.3)	4 (16.7)	6 (25)

Table 5.4

Quantitative feedback on the 'Backcasting' task (Likert scale)

	1 (%)	2 (%)	3 (%)	4 (%)	5 (%)
On a scale 1 (Not at all) to 5 (A lot), to what extent do you think the Backcasting task could make people feel more anxious about retirement?	9 (37.5)	9 (37.5)	4 (16.7)	1 (4.2)	1 (4.2)
To what extent do you think the Backcasting task could make people feel more confident about retirement?	0 (0)	1 (4.2)	2 (8.3)	16 (67.0)	5 (20.8)
To what extent do you think that the Backcasting task, that is a starting plan for your future/retirement, would positively contribute to a more enjoyable retirement experience?	0 (0)	0 (0)	3 (12.5)	17(70.8)	4 (16.7)

iv Trialling 'Backcasting' task

The responses to the task were coded and summarised in accordance with the questions for the 'Backcasting' task (Appendix 6.AG), and the themes included hoped-for future selves and ways to achieve them, activities that participants were planning to engage with, preferred ways to look for information about available opportunities.

The most prevalent hoped-for possible selves were related to health and involved physical health, mental health, longevity, maintaining mobility, and independence. Another commonly mentioned future self was associated with staying socially connected, through family or spouse roles, friendships, and general contribution to the society. Some participants noted that being in the state of happiness, life enjoyment, and creativity also were important aspects of their ideal future selves.

Importantly, participants shared that the main ways to achieve their future selves were through maintaining physical fitness, taking part in various PA including sport but also other activities such as gardening or walking. Purposefully maintaining communication with friends and family members, making new friendships, and engaging with new meaningful activities such as volunteering were viewed as the main ways to support social connectedness. The most common places where participants were planning to engage with activities included nature, sport clubs or gyms, gardens, community groups and local clubs. The majority were going to look for opportunities through the Internet, although word of mouth (i.e., via friends or colleagues) was also a common answer.

5.3 Discussion

The main aim of this study was to design an intervention for promoting health and well-being during retirement transition. The research has attempted to address the gaps in previous interventions, specifically the lack of focus on individuals in the retirement transition, a systematic approach in intervention development, and theory-informed mechanisms (Lara et al., 2016; Rodríguez-Monforte et al., 2020). The intervention was developed in a sequential way in accordance with the first four steps for IM. The initial prototype of the theory- and evidence-based intervention was reviewed by experts with appropriate knowledge and experiences in the series of co-design workshops and in an individual interview. Workshop participants also discussed barriers and facilitators associated with promoting health behaviours among individuals experiencing retirement transition. Subsequently, members of the target population trialled and evaluated the refined intervention through an online survey. The main product of this co-design research project is a lifestyle planning ‘Backcasting’ task.

5.3.1 Facilitators for Implementing Health Promotion Initiatives during Retirement Transition

Experts in the workshops and the pension engagement specialist touched upon conditions and facilitators for implementing initiatives to support a successful retirement transition. Implementing interventions before retirement was deemed to be more beneficial, as it provided more opportunities and time for preparation and adjustment to the new lifestyle. There is already substantial evidence about the importance of financial preparatory activities before retirement (Farrar, Moizer, Lean, & Hyde, 2019; Topa, Lunceford, & Boyatzis, 2018) and the role of workplaces in supporting employees' knowledge about financial planning (Hira & Loibl, 2005). Importantly, the stakeholders in the current research suggested that lifestyle planning for retirement might also be implemented through the workplaces or/and with the help of special consultants. Lifestyle and financial planning can be combined, so individuals would be able to assess whether they have enough financial assets to implement their plans for retirement. Additionally, financial aspect of such sessions can appeal to a variety of individuals and be a stronger motivator to engage in planning as compared with health benefits.

There were also several discussions about the role of community resources in implementing initiatives and providing information about local facilities for those going through retirement transition. Existing evidence (e.g., Baum & Fisher, 2014) and recent policies (e.g., the NHS Long Term Plan, 2019) have suggested that strong community links provide better opportunities for implementing local health promotion initiatives and supporting vulnerable individuals. For individuals in the retirement transition who experience changes in identity and social circles and search for new roles and activities, getting support from their local communities can be particularly valuable.

5.3.2 ‘Backcasting’ Task – Amendments and Evaluation

Overall, the prototype ‘Backcasting’ task was well received by the workshop participants, the pension engagement consultant, and the survey respondents. Participants were particularly supportive of the individualised approach to setting goals and selecting activities. In line with SDT (Deci & Ryan, 2000), providing freedom of choice, and thus supporting autonomy, was seen as a facilitator for participation in physical, social, and other activities after retirement. Furthermore, a flexible approach to selecting goal targets can be particularly beneficial for the target population with their diverse needs and individual circumstances.

Some experts noted that an important advantage of ‘Backcasting’ was the focus on a positive future self-image as opposed to criticising one’s current behaviour, an approach often used in public health messages and campaigns, for example labelling overweight people who do not regularly exercise as lazy and weak-willed (Puhl & Heuer, 2009). Picturing unhealthy behaviours in a negative light can lead to negative stereotypes about people with unhealthy habits or body images (Hilbert & Ried, 2009), which causes stigmatisation, psychological distress, and social exclusions (Major & O’Brien, 2005). Threatening communication has also been evidenced to be an ineffective method for behaviour change that can induce maladaptive responses (Peters et al., 2013), for example threatening health information about the risks of smoking can cause avoidance responses among smokers (Kessels, Ruiter, & Jansma, 2010). ‘Backcasting’ task has avoided sending threatening messages by encouraging individuals to focus on positive goals and wishes for the future and engaging with health behaviours as an autonomous way to support these wishes. Positive future selves have a motivational influence as individuals create them based on their own goals, personal values, and interests (Boomsma, Pahl, & Andrade, 2016). As evident by the participants who trialled the

‘Backcasting’ task, setting future positive image was an aspirational way of thinking about their future in retirement that provided them with a sense of purpose.

The addition of short-term goals based on the feedback from the workshops’ participants was also positively accepted by the target population. According to the survey participants, short-term goals can help to monitoring their progress and support feelings of achievement, which is consistent with recent findings on the benefits of self-monitoring for behaviour change in older adults (French, Olander, Chisholm, & Mc Sharry, 2014). Goal setting and monitoring accomplishments may support feelings of competence, nutrient that plays an important role in maintaining health behaviours in older adults (Springer, Lamborn, & Pollard, 2013). Also, in accordance with the principles of goal setting, specific, clear, measurable goals can be more motivating than general outcomes (Locke & Latham, 1990). Therefore, it is recommended to break down the complex processes into sub-goals with regular reviews. Selecting specific goals allows measuring the success and quantifying shortcoming, so the individuals can more realistically assess their progress (Davis et al., 2007).

One survey participant noted that although setting positive images for the future is important, people approaching older age should also consider the possibility of negative scenarios in older age such as health deterioration, and plan for ways to adjust to new situations (e.g., adapting houses). Although this is an important suggestion, the ‘Backcasting’ intervention provides flexibility for revising the plan - adding and changes goals/future self-identities to reflect the physical and lifestyle changes associated with older age. Furthermore, whilst the necessity to adapt living arrangements during older age (e.g., downsize or disability support) is caused by possible health deterioration (Auger, Caradec, & Petite, 2017; Davey, 2006), the goal of this change is to support the

independent future self. As such, considering and planning for positive future selves remains relevant even when individuals have to plan how to adapt to possible challenges.

One criticism that the ‘Backcasting’ task received from both stakeholders and survey responders was that for people in a challenging situation (e.g., financial insecurities, health issues), thinking about positive future images and planning for activities can be problematic and anxiety-inducing. However, planning might also be an adaptive coping strategy, which can lower the level of psychological distress, give people a sense of control over their lives, and can provide flexibility for people with different access to various resources (Burker, Evon, Loiselle, Finkel, & Mill, 2005). Some of the workshop participants suggested that in order to reduce stress associated with thinking about the future, especially among at-risk groups, it might be beneficial to use a supporter who would guide more vulnerable participants in the right direction. The experience of the pension engagement consultant also indicated that live sessions might provide an opportunity to communicate with the target population, build rapport, and increase confidence about benefits of planning for retirement. Therefore, even though the online implementation of ‘Backcasting’ task seemed to be well accepted by the participants and online delivery can address time and resource constraints, protect anonymity (Bennell et al., 2017; Hennemann, Beutel, & Zwerenz, 2016), there might still be a need for face-to-face interaction with a consultant or instructor who can support participants, particularly for more vulnerable groups. As such, ‘Backcasting’ can potentially be delivered by both methods – online and face-to-face depending on needs and individual preferences.

5.3.3 Strengths, Limitations, and Future Directions

The present study followed the Intervention Mapping approach for the development of health interventions. As advocated in this approach, the study applied systematic and

rigorous methods to identify and evaluate the theoretical and evidence bases for a novel intervention (Bartholomew et al, 2006). One of the highlights of IM is the inclusion of stakeholders in the process of identification and developing intervention methods. This study utilised co-design methodology to facilitate stakeholders' engagement and input, which can be modified and refined to suit the specific intervention context and target population.

In alignment with the existing knowledge (Bowen et al., 2013; Clemensen, Larsen, Kyng, & Kirkevold, 2007), engagement of the stakeholders helped to better understand the needs of the target group, generate and improve the ideas for the intervention, and understand what resources are needed and can be used for implementing the intervention. For example, diverse knowledge and experiences of the involved experts produced a range of ideas on where to implement lifestyle interventions (e.g., workplace, community hubs) and how to reach individuals with various needs, backgrounds, and resources. The insights of the pensions engagement specialist were particularly useful in terms of understanding the mindset and priorities of people approaching retirement and how to potentially engage them into thinking about their lifestyle in retirement, for example through combining financial and lifestyle planning. The experts also suggested some feasible ways for delivering the 'Backcasting' initiative such as a through an app or as a part of retirement planning workshops. Additionally, the feedback on the 'Backcasting' intervention helped to refine some elements, in particular, the inclusion of short-term goals, which were positively evaluated by the target group.

Despite the several strengths of the co-design approach, there were also some challenges related to its implementation. One of the challenges was organisational. Due to busy schedules, availability of the stakeholders for the workshops was problematic. However, this barrier was overcome through completing several smaller workshops and

the option to attend the workshop electronically. Furthermore, during the workshops a recurring difficulty was keeping the discussions focused, this was due to the diversity in experiences and participants' priorities. Strategies to enhance focus included careful identifying participants with relevant knowledge, giving clear instructions on the workshop aim, developing focused questions and tasks, applying interview skills such as paraphrasing and summarising (Breen, 2006). Still, it remained a challenge to maintain a focus on certain topics, specifically participants often tended to move topic of the discussions towards older population.

Even though the workshop participants advocated avoiding "older age" reminders in titles or promotion briefs for the interventions, they often seemed to view individuals approaching retirement or recently retired as older adults. This can be explained by the prior experiences of the participants, as most of them have worked predominantly with older population and not specifically with those in the retirement transition. However, this can also be a reflection of the perceptions that the general population has about retirement, which is viewed as the beginning of older age (Dionigi, 2015). The primary researcher found some useful techniques to overcome this bias on the perception: through explaining the aim of the workshops at the beginning, preparing slides with the specific questions, bringing the focus back to retirement transition during the discussions. These strategies might be useful for other researchers and practitioners working in the area of retirement and older adults.

Given that a lot of people approaching retirement do not belong to older age groups (ONS, 2018) and/or do not want to be associated with older age, seeing this target group as older adults especially by those who are involved in intervention development and implementation can hinder the effectiveness of such initiatives. Middle-age and younger older age groups can sufficiently differ from older adults in terms of their needs,

preferences for activities, and resources (Koo, Kõlves, & De Leo, 2017; Lee, Oh, Park, Choi, & Wee, 2018). Therefore, interventions designers for the retirement transition should take into account these differences and abstain from perceiving the target group as older adults.

The final two steps of IM (Intervention Implementation and Evaluation) were dismissed in the present research. However, the potential future options for implementation were discussed, for example the methods for delivery (e.g., an app, video, or a part of a workshop), the implementors (e.g., businesses) and settings (e.g., community, workplace). Furthermore, a part of the intervention evaluation (design evaluation) was implemented by collecting feedback from the ‘Backcasting’ trial participants on acceptability and practicality of the task (Brooke, Lin, Ntoumanis, & Gucciardi, 2020). A potential area for the future development of the ‘Backcasting’ intervention is to carry out the two final steps of IM - implement intervention and evaluate its effectiveness in an experimental study. For example, the effectiveness of the ‘Backcasting’ task in supporting health behaviours, well-being, and satisfaction with retirement can be assessed in a randomised controlled trial, which is a rigorous way for evaluating behaviour change interventions (Rosen, Manor, Engelhard, & Zucker, 2006).

5.3.4 Implications

The findings of the present research are relevant to the development and distribution of future lifestyle interventions targeting people of retirement age. The acceptability of the ‘Backcasting’ task indicates that the intervention can be optimised, tested, and potentially implemented in the wider population. Importantly, promoting PA and other health behaviour indirectly as the ‘tools’ for achieving the desirable future was positively evaluated by both experts and target population and can be tested in future research and

initiatives. Trialling the task with some survey participants also demonstrated that PA and social engagement were the main methods for achieving desirable future selves and goals for them.

The results of the discussions with the experts also suggest that workplaces and communities could be potential places for wider distribution of such lifestyle retirement planning initiatives. The involvement of employers and utilising community links could be beneficial for engaging more hard-to-reach individuals. Additionally, trialling the ‘Backcasting’ task with individuals going through the retirement transition demonstrated promising results for Web-based interventions, particularly since the increasing number of older and middle-age adults become routine Internet users (Harte et al., 2014). However, more tailored support might still be needed for individuals who are less digitally equipped (Lara et al., 2016) or anxious about the prospect of retirement.

The present research also adds to the scant literature on the development of lifestyle-related interventions for people in the retirement transition period. Productive collaboration with the stakeholders and positive evaluation of the intervention suggest that more future initiatives for the retirement transition should follow intervention development approaches and engage experts, intervention implementers, and users in co-design.

5.3.5 Conclusions

To conclude, the present study designed a lifestyle planning intervention for the retirement transition. The study followed the IM protocol - a systematic, sequential approach for designing interventions, and involved a co-design process with stakeholders. The outcome of the process is a ‘Backcasting’ intervention, which applies

two theoretically- and evidence-informed methods – future selves and planning. The ‘Backcasting’ task was trialled and positively assessed by the target population.

Chapter 6

General Discussion

6.1 Overview of the Thesis

The main aim of the thesis was to expand the knowledge about psychological predictors and mechanisms behind retirement adjustment. Specifically, the research proposed that self-determination theory (SDT; Ryan & Deci, 1985, 2000) could explain fluctuations in well-being in the retirement process through basic need satisfaction and need frustration. The thesis has also added to the knowledge on the role of other psychological predictors in retirement adjustment such as identity, social connectedness, independence, coping strategies, and personality. A novel retirement adjustment (R-Adj) framework on factors contributing to positive retirement transition has been proposed. Additionally, the thesis proposed and tested an SDT-informed mechanism behind the effects of personality on retirement experiences through the differences in interpretation of contexts as need satisfying or need thwarting and subsequent behavioural responses.

The second main goal of the thesis was to develop an intervention promoting physical health and well-being over retirement transition. The intervention was designed in accordance with the steps for intervention mapping (IM; Bartholomew et al, 2006) and informed by the findings in this thesis and previous literature on retirement adjustment (e.g., Perras et al., 2016). Stakeholders with the appropriate knowledge and experiences were engaged in the process of reviewing and refining the intervention. As a result, a novel lifestyle planning intervention for retirement transition was developed.

The main findings of the thesis were: (1) need satisfaction underpins fluctuations in well-being within individuals over retirement transition and differences in well-being between individuals; (2) the influence of personality on retirement experiences can be explained by differences in the perception of the environments as need satisfying or thwarting, which in turn affects behavioural responses; (3) identity rebuilding, social interaction, and independence were identified as core elements for retirement adjustment based on the individuals' lived experiences; and (4) an intervention for promoting well-being and health over retirement transition.

6.2 Main Findings

1) Need satisfaction underpins fluctuations in well-being in individuals over retirement transition and differences in well-being between individuals.

The longitudinal study (Chapter 2) tracked changes in need satisfaction and frustration in association with well-being over retirement transition. Results demonstrated that higher need satisfaction was positively associated with greater levels of well-being at both within- and between-individuals level. Therefore, the findings added to the knowledge on the universal importance of need satisfaction for well-being across different population groups and confirmed a proposed SDT informed mechanism for retirement adjustment. The results also demonstrated the variety of individual retirement adjustment trajectories including ascending, maintaining, U-shape, inverted U-shape, and descending. The latter three trajectories accompanied by a decrease in need satisfaction, social networking, and total identity, but an increase in need frustration and loneliness in some participants indicated the needs to further investigate predictors of retirement adjustment and to support individuals going through retirement transition.

2) Influence of personality on retirement experiences can be explained by differences in the perception of the environments as need satisfying or thwarting, which in turn affects behavioural responses.

There exists a gap in the literature in explaining how different personalities may affect retirement experiences (e.g., Löckenhoff, Terracciano, & Costa, 2009; Serrat et al., 2017). Therefore, the second study (Chapter 3) proposed a novel SDT-informed explanation for the effects of personalities on retirement adjustment and examined if personalities can affect retirement experiences through the differences in interpreting various contexts as need supportive or thwarting and behavioural reactions to these contexts. Furthermore, the study went beyond the impacts of the big five personality traits (Costa & McCrae, 1988 1992) and additionally measured the effects of overt and covert forms of narcissism (Dickinson & Pincus, 2003; Gabbard, 2009; Wink, 1991).

Results suggested that extraversion and conscientiousness predicted perceiving the environment as need supportive but less as need thwarting, whereas covert narcissism was positively associated with interpreting contexts as need thwarting but negatively with interpreting them as need supportive. Personalities did not have direct effects on behavioural responses to various contexts. The findings, however, demonstrated positive associations between felt need satisfaction and need seeking behaviours and less need avoidance. By contrast, need frustration was positively associated with greater need avoidance but less need seeking behaviours. With respect to retirement associated challenges, this was a worrying finding, as it means that more ‘vulnerable’ personalities (i.e., high in covert narcissism, low in extraversion and conscientiousness) are even at greater risk of developing maladaptive responses to challenging situations because of a higher likelihood of perceiving the contexts as need thwarting and subsequently selecting need avoidance responses.

3) Identity rebuilding, social interaction, and independence were identified as core elements of retirement adjustment based on individuals' lived experiences.

The third study (Chapter 4) employed a qualitative approach to better understand individual thoughts and feelings about complex psychological process of retirement adjustment, an interplay between various individual and contextual factors (Amabile, 2019). Three main interconnected contributors to retirement adjustment identified from focus group discussions and individual interviews with retired adults included identity rebuilding, social interaction, and independence. Identity shift from a work role and associated stress after retirement was a prominent theme, and for many, one way to acquire or strengthen alternative identities was through social roles and memberships. As evidenced in the literature (Haslam et al., 2019; Wang et al., 2014), retired participants highly valued social relationships and its benefits including emotional support, feelings of connectedness and belongingness. However, for many retirees it was important to be in control when, and with who, to socially engage, also to what extent. Autonomously selected activities and roles appeared to be most supportive in new identities acquisition and better for well-being and satisfaction with retirement. Overall, high priority was given to physical, intellectual, and social independence.

The findings provided the basis for a novel retirement adjustment (R-Adj) framework, which incorporates multiple layers of contributors to retirement adjustment. The core elements of the framework include identity rebuilding, social interaction, and independence, all anchored on activity engagement, and connected with other individual (e.g., personality, sociodemographic characteristics) and contextual factors (e.g., physical environment). The identified elements of retirement adjustment remained relevant for positive retirement experiences at different stages. However, the most noticeable changes in social circles, identity, lifestyles, and the most remarkable call for

independence were observed in those who retired less than a year ago, which suggests that retirement transition can be the most optimal time for interventions.

Additionally, Chapter 4 suggested the loss of need supportive after leaving employment can be compensated through engagement with new activities and roles. For example, the sense of belongingness and connectedness in new activities and group memberships can potentially substitute the much valued work-associated belongingness lost after retirement.

4) Co-designed an intervention for promoting well-being and health over retirement transition.

The final study (Chapter 5) aimed to develop an intervention that would facilitate more adaptive retirement transition and promote healthy ageing. The intervention design followed the IM protocol (IM; Bartholomew et al, 2006). Stakeholders including experts in the fields of ageing, exercise, behaviour change, and retirement from public health, voluntary, and academic sectors were invited to participate in intervention co-design workshops. The prototype intervention was trialled and evaluated by the target population – people in the retirement transition. Overall, the designed ‘Backcasting’ intervention was positively evaluated by both experts and the target population.

The concept of the ‘Backcasting’ is the focus on future selves that people can achieve by engaging in certain behaviours and activities of their choice. The intervention was informed by the SDT principles, specifically need support. Individuals were encouraged to develop a lifestyle plan in accordance with their own goals, interests, and values, which can be facilitative for developing intrinsic motivation (Deci & Ryan, 1985). Provided the importance of social connectedness and relatedness support in retirement, social component was also promoted as a separate activity or a part of other

behaviours (e.g., planning with whom to participate in activity). Additionally, intervention used more achievable short-term goals in addition to ‘long – term’ future selves.

6.3 Strengths of the Thesis

The strengths of individual studies have been explicated in the respective chapters, here, the main advances of this work as a whole are outlined. One of the main strengths of this thesis is proposing and testing a novel SDT-informed mechanism underlying retirement adjustment. Even though SDT is not a specific retirement theory but theory of human motivation, it presents potential for understanding retirement processes. In the general introduction (Chapter 1), it was proposed that SDT can address some limitations of the existing retirement theories, particularly by providing a universal explanation for changes in well-being over retirement transition through the fluctuations in need satisfaction and need frustration. Chapters 2-4 tested and demonstrated how need satisfaction/frustration can be applied to understand complex retirement process.

Furthermore, SDT can predict the effects of various environments and activities on retirees’ well-being and behaviours, which was also addressed in Chapter 3 and 4. Additional benefit of applying SDT to retirement is that this theory provides a basis that determines humans’ behaviour and can link relevant causal factors of the behaviour to appropriate change methods (Patrick & Williams, 2012). Self-determination theory was utilised to inform intervention development in Chapter 5.

Importantly, despite testing SDT as a novel framework for explaining retirement adjustment, this research also reconciled the different retirement theories and frameworks with SDT when discussing the findings. This research utilised various retirement theories (e.g., role theory; Phillips, 1957; stage theory; Atchley, 1976) and

psychological concepts (e.g., dimensions of well-being; Ryff, 1989) to explain the results of Chapters 2 and 4, which lead to the creation of the R-Adj framework incorporating various levels of predictors to retirement adjustment. The development of ‘Backcasting’ intervention was also informed by other psychological concepts (i.e., future selves) and mechanisms (i.e., planning) in addition to basic needs.

Another strength of this series of inquiry was applying mixed methods for answering the research questions. The research conducted was guided by a pragmatism philosophical paradigm, which advocates for the use of mixed methods as it allows a deeper understanding of the research phenomena (Johnson & Onwuegbuzie, 2004). I argue that the pragmatic approach is the most suitable choice for addressing the aims of two studies within this thesis – for 1) exploring the ingredients of positive retirement adjustment (Chapter 2-4) and 2) developing an intervention for retirement transition (Chapter 5).

A methodological strength of this research was the range of measures and tools for data collection, for example quantitative scales for assessing psychological variables, focus group and interview guides, questions for co-design workshops, and evaluation survey for the ‘Backcasting’ task. Some data collection tools were developed for this research, specifically vignette scenarios that described a need supportive or thwarting experience in a context relevant to retired adults were designed in Chapter 3. Subsequently, various data analysis methods were used in this research project including quantitative (i.e., multiple regression, hierarchical regression, multilevel modelling) and qualitative (thematic analysis) methods.

The next section will discuss the retirement aspects that SDT has not been able to address as well as this thesis’s methodological limitations.

6.4 Limitations of the Thesis

6.4.1 Shortcomings of Self-Determination Theory in Application to Retirement Processes

The thesis focus has been on applying SDT to explain the process of retirement adjustment. However, multidimensional retirement process involves complex psychological, social, economic, and biological changes (Lange & Grossman, 2010), and thus even a comprehensive theory such as SDT cannot explain all various processes associated with retirement. For example, SDT might not be applicable to explain the direct effects of demographic characteristics or biological determinants such as age, gender, ethnicity, education on retirement adjustment. Instead, age can affect retirement experiences through biological mechanisms, for example through the restrictions associated with physical and mental health deterioration or the need to change lifestyles (Lange & Grossman, 2010). Gender, ethnicity, and age can define one's identity, which in accordance with role theory (Kahn et al., 1964) or social identity theory (Tajfel, 1974; Tajfel & Turner, 1979) influences one's expectations and behaviours, and subsequently might affect retirement adjustment. Additionally, SDT cannot explain the impacts of life experiences on retirement adjustment journey, which are discussed in the life course prospective approach (Elder, 1995; Elder & Johnson, 2003).

Self-determination theory cannot fully explain some findings in this thesis. For example, Chapter 4 demonstrated the significant role of independence for retirement adjustment. Prominently, for the retired participants it was important to be independent in their decisions and behaviours without the involvement of others. This somewhat differs from autonomy in SDT, which can be attained with or without the support of others (Bauger & Bongaardt, 2016).

Additionally, this research added to the evidence on the importance of health and financial status as predictors of retirement adjustment. Both factors are described within resources perspective framework (Wang, 2007; Wang et al., 2011) as resources that help individuals to satisfy their needs and achieve personal goals (Hobfoll, 2002). Life course perspective (Elder, 1995; Elder & Johnson, 2003) also acknowledges the impact of financial preparations and the role of socioeconomic factors in the retirement adjustment (Getting & Anderson, 2018). In contrast, SDT might not be able to directly link the effects of health and financial situation and well-being in retirement transition.

As such, SDT alone cannot fully explain retirement adjustment, and numerous theories and frameworks need to be applied and complement each other in order to explain various retirement processes and experiences. However, this thesis has added to the existing knowledge on retirement adjustment, demonstrated that need satisfaction is a useful predictor of changes in well-being and can inform health promotion interventions for retirement transition.

6.4.2 Lack of Generalisability and Sample Representativeness

A number of methodological limitations are evident in the research that might affect the generalisability and utility of the findings. One major methodological limitation specifically for the longitudinal study was the small sample size, which has led to less than conclusive findings. Furthermore, majority of participants in this research, including the longitudinal, qualitative studies and the evaluation survey for the ‘Backcasting’ task, were educated and/or had non-labour and skilled jobs. Results of this research might not be applicable to retired adults who were less educated and/or in less skilled jobs.

The limitations of each separate study were discussed in the corresponding chapters, however some of the limitations identified in the earlier studies have informed the designs of the subsequent studies. For example, vignettes scenarios were used for data collection in Chapter 3. As previously discussed, the ability of vignettes to simulate aspects of real-world scenarios and accurately capture real-life decisions is limited (Hainmueller, Hangartner, & Yamamoto, 2015). The qualitative study (Chapter 4) of this thesis has compensated for this limitation by delving into participants lived experiences. Furthermore, by recruiting participants with different lengths of retirement who reflected on their past and present experiences of retirement transition, the qualitative study addressed the challenge of recruiting recent retirees exposed in Chapter 2. Also, both former manual- and non-manual workers were purposefully recruited for the qualitative study (Chapter 4), still more non-manual workers responded to recruitment.

Challenges with recruitment that result in lack of generalisability of results are commonly cited in the ageing literature and can present significant barriers for research advancement and practical applications (Kammerer, Falk, Herzog, & Fuchs, 2019; McHenry et al., 2015). Therefore, the next section (6.5) will separately discuss the reasons for the experienced recruitment challenges and the ways how these research limitations have been addressed.

6.5 Challenges in Recruitment of the Target Population

6.5.1 Relevance of the Recruitment Issues

To investigate how a variety of factors predict differences in retirement adjustment and the lived experiences of retirement, individuals planning to retire or who had retired for different periods of time were recruited to participate in the present research. The recruitment, however, has been a challenging process over the course of this PhD,

particularly with regards to those going through the retirement transition. Insufficient recruitment and lack of diversity among participants are common research problems, which can cause reduced statistical power, bias (Etz & Arroyo, 2015), and difficulties producing meaningful results (Allmark, 2004). ‘Inspired’ by the challenges and endeavours in the present research I will discuss the potential causes for the difficulties in recruitment in this PhD, reflect on my own experience, and suggest potential ways to overcome these barriers.

6.5.2 Barriers for Recruitment

The identified barriers for recruitment were divided in three categories: person-based, study-related, and environmental (Warren-Findlow, Thomas, & Freedman, 2003).

Person-based factors

Personal factors that might hinder recruitment of retired adults include health, finances, personal beliefs and circumstances (Warren-Findlow et al., 2003). Of particular relevance to retired adults is health status. Poor self-rating of health and multiple chronic conditions can prevent older adults from participating in research studies, for example due to functional limitations, emotional decline, inability to commit to research requirements due to being homebound, or frequent hospitalisations (Mody et al., 2008). Importantly, with an increasing chance of developing diseases with age (Niccoli & Partridge, 2012) health deterioration can be one of the main reasons for retirement (Stattin, 2005). Therefore, potentially there could be a pool of recently retired people who would satisfy the inclusion criteria but choose not to participate due to poor health conditions (Warren-Findlow et al., 2003).

Some factors such as lack of access to information, misunderstanding information, and a distrust in research, safety, and confidentiality can prevent research

recruitment of vulnerable populations including minorities or socioeconomically underserved people (UyBico, Pavel, & Gross, 2007). It is possible that these recruitment limiting factors are associated with issues surrounding older people with lower educational level, who are less likely to participate in research studies than those with higher education level (Goldberg et al., 2015). This might also explain why fewer retired adults from manual occupational backgrounds ($n = 8$) responded to and participated in the qualitative study (Chapter 4) compared with those from non-manual positions ($n = 20$), even though the study purposefully attempted to recruit both groups.

Furthermore, the vast majority of participants in the studies for the present PhD identified themselves as 'White British'. The barriers to recruitment of ethnic minorities may include lack of language skills and/or the use of complicated language in research settings (Hussain-Gambles, Atkin, & Leese, 2006), mistrust of authorities (Knobf, Juarez, & Lee, 2007), lack of interest in research participation, limited time, and financial resources (Ahlmark et al., 2015; Bonevski et al., 2014). With respect to the present research, the lack of ethnic diversity in the participants recruited was likely aggravated by the research being conducted in one of the most ethnically homogenous areas in the UK.

Another common barrier factor involves schedule conflicts for participants (UyBico et al., 2007). Notably, a lot of older adults after retirement have more flexibility in the use of time. However, a significant number of retired adults might have other responsibilities such as caring after their family members (Saunders, Greaney, Lees, & Clark, 2003). This was also representative of the participants who volunteered to take part in this PhD research. A frequent barrier to participants in the qualitative face-to-face study was arranging suitable times to conduct focus groups with many participants citing their commitments to families or volunteer work as an issue.

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Study-related factors

Studies-associated factors that may affect recruitment and retention of participants include recruitment strategy, inclusion criteria, and study design.

With regards to the present research, recruitment messages using words such as ‘retirement’, ‘retirees’, or ‘retired adults’ could discourage participation. Research has demonstrated that people generally tend to distance themselves from the connotation of being old (e.g., Kaufman & Elder, 2002), and for many, retirement defines the beginning of old age (Dionigi, 2015). Retirement may not be perceived as an attractive social category, it may thus hinder response to recruitment from retired population. Additionally, due to a lack of consensus about the definition of retirement (Cahill, Giandrea, & Quinn, 2015), some potential participants may question their retirement status.

One barrier for research participation could be the narrow inclusion criteria (Yancey, Ortega, & Kumanyika, 2006). This could be particularly relevant for the longitudinal study and partially for the focus groups as they aimed to recruit people approaching retirement or recently retired. Potentially, recent retirees who just started enjoying freedom from work responsibilities and time flexibility did not want to oblige themselves with additional commitments just after retirement (Weiss, 2005). Also, recent retirees in the focus groups noticed that one of the most preferable activities after retirement was increased travelling and visiting friends or families, which could present another barrier for participation. With regards to people approaching or planning retirement, they could be too busy to engage in research activities or still uncertain about their retirement plans.

Environmental factors

Warren-Findlow et al. (2003) listed logistical convenience as one of the important factors affecting participation in research among older adults. Closeness of the site to transportation, the availability of public transport, and the cost can play a determining role in study participation, especially for older adults, people with health issues or disabilities. Notably, some individuals who took part in the focus groups and interviews specified that they would prefer to schedule the sessions in the university during concessionary travel hours.

Overall, time convenience was an important factor for most individuals that could have also created participation bias in the studies. Evidence has demonstrated that healthy older people are easier to access as their time is more flexible after retirement (Golomb et al., 2012).

6.5.3 Overcoming Challenges in Participants Recruitment and Retainment

In the response to challenges associated with recruitment in this research, several strategies for increasing recruitment and retention of participants were used, and some of them were particularly helpful.

Widespread recruitment through various means (e.g., social media, posters in community settings, contacting larger employment organisations, trade unions, and letters to sport organisations) was used for participants recruitment. In order to maximise the access to potential participants who matched the inclusion criteria (i.e., those in retirement transition), organisations that worked with the target population, for example voluntary sector, consultants, websites or groups that offer pre-retirement planning sessions, were identified and contacted. Furthermore, as retirement planning organisations work with various employers, approaching these organisations for support was beneficial for recruiting participants with different occupational backgrounds. To

achieve more diversity among participants, community centres and clubs in different neighbourhoods within the North East were approached. Also, a valuable pool of participants was from previous studies conducted by other research teams, therefore optimising relationships and even establishing potential collaborations with other academics could increase participants' recruitment (Patel, Doku, & Tennakoon, 2003).

To address a potential barrier of the lack of trust in researchers, it is recommended to provide clear information about the research, privacy, and safety protection (Kerasidou, 2017). Information about the research, its purposes, confidentiality protection was provided in the Participant Information Sheet. In accordance with Northumbria University regulations, details about obtaining ethical approval were placed in recruitment posters. Furthermore, the provided information was easily understandable for general non-academic public, and participants had an opportunity to ask questions at any time.

For retention of participants in the research, particularly in a longitudinal study, the main strategies included maintaining positive communication through emails and phone, continued attention, providing timelines for the next data collection points, sending polite reminders, keeping participants' postal addresses and contact information updated. Possibility of enjoyable personal contact attracts research participants (Mody et al., 2008), which can be relevant for recruiting retired people, given the decrease in social interaction after leaving employment. This was particularly applicable to the qualitative part of this research, where participants had a chance to discuss important topics with other retirees and the researchers.

For the studies that required face-to-face contact such as focus groups and interviews, it was important to arrange a convenient time for participants to come on

campus. Considering that some participants used public transport, face-to-face meetings were arranged during the times when older people could use public transport for free. Parking spaces on campus were provided for those who needed them. Additionally, to offset costs of time and travel and reduce the possible feeling of the burden (Mody et al., 2008; Patel et al. 2003), all the participants in focus groups and interviews received small incentives (vouchers for a local shopping centre).

In sum, to increase recruitment rates, future research on retirement transition should consider the variety of retirement pathways, put more resources in widespread recruitment, identify sources of potential participants, and target underrepresented groups. It is also advised to develop backup plans for recruitment early if the rate remains low and potentially reconsider design, for example make the length of studies shorter for participants. Additionally, for quantitative research, alternative approaches such as Bayesian analysis that does not rely on the distribution of data in a particular sample is recommended as previously discussed in Chapter 2. Finally, it is recommended to increase collaborations between researchers, third sector, public health bodies, and general public to promote awareness of research activities and its benefits in various groups of population.

6.6 Implications of the Thesis and Future Directions

Adding to the evidence on acceptability of intervening through the retirement transition

Diversity of individual retirement pathways and experiences questioned the speculation that retirement is an optimum time for intervening to improve health and well-being in later life. Despite attempts to implement interventions in this life transition (Lara et al., 2014; Werkman et al., 2010), the ways in which retirement transition could serve as a ‘gateway’ for targeting people in different retirement contexts remained unclear. The

present research suggested why and how individuals during retirement transition could be supported.

First, the longitudinal study (Chapter 2) reported declining trajectories for well-being and need satisfaction and increased levels of need frustration for some participants, and thus added to the evidence on the necessity to support retirement adjustment of some potentially more vulnerable individuals (Segel-Karpas, Bamberger, & Bacharach, 2013). Chapter 3 demonstrated that some personalities could exacerbated responses in unfavourable retirement contexts associated with low need support or high thwarting. Chapter 4 evidenced more prominent call for identity rebuilding, social connectedness, and urge for independence in recent retirees compared with those who retired a long time ago. Finally, the workshops participants (Chapter 5) advocated for implementing social and health planning activities for retirement at workplaces and other settings.

Results of these studies point to the need for intervention before the transition occurs. Importantly, the findings have formulated user-informed strategies on how to intervene and promote new activities and behaviours – through providing contexts that can support basic needs, social networks, independent choice, and help to explore and acquire new identities.

Utilising SDT to inform health and well-being promotion initiatives for the retired population

The use of SDT to explain retirement adjustment can have important practical implications for promoting health and well-being in the retired population. Need support plays a crucial role in initiating and maintaining behaviours, and therefore SDT has been widely used in health-related behaviour change initiatives (Ryan et al., 2008; Ryan & Deci, 2007). Findings in this thesis suggested that individuals in retirement transition

could lose the sources of need support from workplaces and attempted to compensate decrease in need support from other environments and roles, for example, some people engaged with exercise classes to meet new people and support relatedness. This urge to find new environments for need satisfaction after leaving employment can be used to promote desirable health behaviours and activities by providing need support, which was partially employed in the ‘Backcasting’ intervention and demonstrated promising results. Need support mechanism should be exploited by researchers, healthcare professional, and public health bodies in a wider range of health promotion initiatives and programmes focusing on retirement transition.

Chapter 3 also demonstrated that need satisfaction and need frustration can serve as a mediator between personality and retirement adjustments. There is a potential for need satisfaction to mediate relationships between other psychological predictors and retirement adjustment, for example a new identity acquisition in a particular context and well-being in retirement. Similarly, need satisfaction can be measured to predict and explain the effects of new activities (e.g., exercise groups, social clubs) on individuals’ well-being and better understand how meaningful and acceptable these activities would be.

Identifying and supporting the most vulnerable individuals

The vignettes study and the discussions with the experts highlighted the need for a personalised approach in implementing interventions for the target population. Specifically, high risk groups such as people at risk of loneliness or isolation, those with the ‘vulnerable’ personalities, and those who have limited health or/and financial resources might need the support. For example, one-to-one consultations for retirement planning that enable additional psychological support can be implemented. This

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psychological support might include altering negative cognitive styles associated with neuroticism and narcissism, individual promotion and planning for need satisfying activities (Ireland, Hepler, Li, & Albarracín, 2015), supporting confidence in planning for the future. Furthermore, as discussed with the stakeholders in co-design workshops (Chapter 5), workplace initiatives, healthcare facilities and particularly community assets can play a valuable role in reaching and supporting at risk groups (Siegler, Lama, Knight, Laureano, & Reid, 2015).

Suggesting a holistic approach for interventions facilitating retirement adjustment

The emphasis of the R-Adj framework is on the interplay between individual and contextual factors, which should be taken into account when developing and implementing public health programmes or initiatives for the retired population with diverse needs, backgrounds, and opportunities. Therefore, not only an effective health promotion initiative should utilise theory- and evidence-informed methods for changing behaviours but also consider other contextual factors such as physical, cultural environments, organisational settings, and/or community needs and resources (Watts, Phillips, Petticrew, Harden, & Renton, 2011). For example, when designing and implementing a new initiative, researchers and public health bodies should consider public transport infrastructure and accessibility of the intervention sites or other recreational and health facilities in the local areas. In addition, as it was discussed in Chapters 4 and 5, expanding and utilising community resources, reinforcing community links and community-based activities can be particularly valuable for those experiencing retirement transition and for the most vulnerable individuals.

Promoting health activities indirectly

Experts in the workshops advocated for the avoidance of using criticism of unhealthy behaviours in promotion campaigns and programmes but instead suggested to focus on the benefits of health activities such as social support or enjoyment. One of the reasons why the ‘Backcasting’ task received positive evaluation was also the use of ‘indirect’ promotion of active lifestyle through future selves and retirement planning. This is in line with the most recent global WHO guidelines on PA (2020), which suggest that ‘everything counts’ with regards to PA participation and reducing sedentariness. All types of PA that individuals can include in their daily routines (e.g., biking to work or getting up from a desk to walk across the room), are valid and beneficial. Therefore, flexible approach in promoting PA and health messaging should be adapted.

Ultimately, adopting an all-inclusive approach to PA has the greatest potential in terms of supporting basic needs, sustained behaviours, and well-being (Segar, Marques, Palmeira, & Okely, 2020). It is therefore recommended that future health initiatives for the retired population should refrain from using disapproving health messages, employ creative approaches to promoting and providing active lifestyle in a way that reduces defensiveness and enables flexibility and freedom of choice.

Employing intervention development approaches, engaging stakeholders in intervention development

The present research also added to the limited evidence on the systematic step-by-step development of health promotion interventions targeted at people in the retirement transition period. Exploring if need satisfaction can explain retirement adjustment (Chapters 2-4), the lived experiences of the retired population (Chapter 4), diverse needs of the retired population and methods for interventions implementation in the workshops (Chapter 5) helped to develop the ‘Backcasting’ task, which was positively evaluated by

the members of the target population. As previously discussed, it would be beneficial to test the effectiveness of ‘Backcasting’ task in a further research trial. Importantly, utilising IM for developing an intervention for the retirement transition produced useful and promising results. As such, in order to improve feasibility, acceptance, and potential effectiveness of future health promotion interventions for the retired population, it is recommended to use systematic approaches for intervention development more widely, include comprehensive need assessment, and engage experts, intervention implementers, and future users in co-design processes.

Investigate retirement adjustment process in diverse population groups

Retirement experiences can be shaped by socioeconomic and cultural backgrounds (Johnson, 2012), geographic location (Riley, 2012), access to health, financial and other resources (Wang, 2007). Considering somewhat homogenous characteristics of the participants in the current work and general lack of diversity among research participants (Heaven et al., 2016; Kammerer et al., 2019), an important consideration for future studies would be exploring retirement adjustment in people from deprived backgrounds, ethnic minorities, rural communities, with health issues. Furthermore, for future co-design research it is advisable to involve representatives from the target population, specifically ‘at-risk’ groups, and service providers, to ensure that developed interventions can address various needs of retired population and help those who most need the support.

6.7 Concluding Remarks

The conclusions drawn from this thesis advance retirement literature in terms of a better understanding retirement adjustment processes and mechanisms. A novel SDT-based mechanism explaining changes in well-being over retirement transition was proposed

and tested in a longitudinal design. It was also demonstrated that the perceptions of need satisfaction and frustration in various contexts can explain the effects of personalities on retirement experiences. A retirement adjustment framework has been proposed and supported with qualitative data advancing our understanding on what contributes to retirement experiences and the interplay between different predictors. Following these inquiries, a new lifestyle planning intervention for retirement transition was designed. These novel findings have important applied implications for promoting positive retirement experiences and healthy ageing by suggesting how to support retirees' well-being in new contexts and encourage health behaviours through providing need support.

APPENDICES

6.A Participant Information Sheet⁵

Participant Information Sheet

Study Title: Promoting health and physical activity in older age: retirement as a transition point.

Participant ID number:

Principal Investigator: Anastasiia Fadeeva

Principal Investigator contact details: anastasiia.fadeeva@northumbria.ac.uk

Principal Supervisor: Dr Katherine Baker

- You are being invited to take part in this research study. Before you decide it is important for you to read this leaflet so you understand why the study is being carried out and what it will involve.
-
- Reading this leaflet, discussing it with others or asking any questions you might have will help you decide whether you would like to take part or not.

1. What is the purpose of the study?

The study is focusing on enhancing our understanding of retirement process and factors that predict positive retirement experience.

2. What will I have to do if I take part?

Participation will require you to complete a questionnaire pack, which should take around 45-60 minutes. During the task you will be asked to complete several widely used psychological and sociodemographic measures. You will need to complete the questionnaire every 3 months during the first year of the study and then annually for a period of five years. The questionnaires will be distributed online or by post depending on your preferences.

3. Are there any inclusion criteria?

Both male and female participants who are planning to retire from paid employment within next 6 months or have been retired for up to 12 months will be recruited to take part in the study. Participants must be fluent in written and spoken English.

4. Will my participation involve any psychological discomfort or embarrassment?

Completion of the psychological measures may cause some discomfort but this is likely to be minimal. You may find the whole questionnaire quite lengthy. To minimise

⁵ Longitudinal study – Chapter 2

potential discomfort, you will be given a plenty of time to complete the questionnaire and you can take breaks during the task if needed.

5. How will the data collected be used?

The data collected in this study will be used for a Postgraduate Thesis. It is anticipated that the findings of the study may be published in a peer-reviewed journal and presented at conferences. All results will be anonymised and it will not be possible to identify individual participants' data.

6. How will confidentiality be assured?

You will be assigned a unique participant code that will be used for identification purposes throughout the study. Your name and other personal details will not be associated with your data. Only the research team will have an access to any identifiable information. Paper records will be stored in a locked filing cabinet and electronic information will be stored on a password-protected computer. Any personal details will be kept separate from other data and will be treated in accordance with the Data Protection Act.

7. Has this investigation received appropriate ethical clearance?

Yes, this study has received ethical approval from the Northumbria University Faculty of Health and Life Sciences Ethics committee. If you require confirmation of this, please contact the Chair of this Committee, stating the title of the research project and the name of the principal investigator:

Chair of the Faculty of Health and Life Sciences Ethics Committee,
Northumberland Building,
Northumbria University,
Newcastle upon Tyne,
NE1 8ST.

8. Do I have to take part?

You are under no obligation to take part and you will not experience any loss of benefit or penalty if you choose not to participate.

9. How can I withdraw from the project?

You are free to withdraw from the study at any time without giving reason. If you wish to withdraw, simply contact one of the researchers, and they will discuss with you how you would like your data to be treated in the future. If, for any reason, you wish to withdraw your data please contact the investigator within three months of your participation. After this date, it might not be possible to withdraw your individual data as the results might already have been published. As all data are anonymous, your individual data will not be identifiable in any way.

10. Contact for further information:

APPENDICES

If you need more information, would like to discuss your participation, or experience any problems as a consequence of taking part in the study please contact Anastasiia Fadeeva (anastasiia.fadeeva@northumbria.ac.uk) or call 01912437018.

6.B Informed Consent⁶

Informed Consent

Thank you for considering to take part in this research. If you have any questions please ask members of the research team before you decide whether to take part. You can keep a copy of this Consent Form to refer to at any time. Please confirm:

- | | |
|---|--------------------------|
| I have read the participation information sheet | <input type="checkbox"/> |
| I understand what is required of me in this research | <input type="checkbox"/> |
| I have been given the chance to ask questions about the study and these have been answered to my satisfaction | <input type="checkbox"/> |
| I am happy for my data to be used in this research | <input type="checkbox"/> |
| I understand that my participation is voluntary | <input type="checkbox"/> |
| I understand I can withdraw at any stage of the project | <input type="checkbox"/> |
| I am aware that my data will be anonymised | <input type="checkbox"/> |

This information will be held and processed for the following purpose(s):

Promoting health and physical activity in older age: retirement as a transition point.

Participant's name:

Date:

Participant's signature:

Researchers Name: Anastasiia Fadeeva, Dr Laura Thomas, Dr Katherine Baker

Date: 2018

⁶ Longitudinal study – Chapter 2

6.C Questionnaire Pack⁷

Questionnaire pack

This document contains **two sections**. The first asks for **demographic information** relating to you, your life now, and your life when you were in employment. Section two contains several **questionnaires** relating to your health, wellbeing and characteristics associated with retirement.

Please complete this document as **accurately and honestly as possible**. There are no right or wrong answers to any of the questions.

The document does contain several pages of questions, so please feel free to **take a break** at any time.

If you have any questions, please contact the primary researcher: Anastasiia Fadeeva.

Please turn the page over to complete the questionnaire.

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SECTION 1

1 Name:

2 Date of birth:

3 Age:

4 Sex: Male ☐ Female ☐ Other ☐ Prefer not to answer ☐

5 How would you best describe your ethnic origin?

<p>A. White</p> <p><input type="checkbox"/> English/Welsh/Scottish/ Northern Irish/British</p> <p><input type="checkbox"/> Irish</p> <p><input type="checkbox"/> Gypsy or Irish Traveller</p> <p><input type="checkbox"/> Any other White background, <i>write in</i></p>	<p>B. Mixed / multiple ethnic groups</p> <p><input type="checkbox"/> White and Black Caribbean</p> <p><input type="checkbox"/> White and Black African</p> <p><input type="checkbox"/> White and Asian</p> <p><input type="checkbox"/> Any other Mixed / multiple ethnic background, <i>write in</i></p>
<p>C. Asian / Asian British</p> <p><input type="checkbox"/> Indian</p> <p><input type="checkbox"/> Pakistani</p> <p><input type="checkbox"/> Bangladeshi</p> <p><input type="checkbox"/> Chinese</p> <p><input type="checkbox"/> Any other Asian background, <i>write in</i></p>	<p>D. Black / African / Caribbean / Black British</p> <p><input type="checkbox"/> African</p> <p><input type="checkbox"/> Caribbean</p> <p>Any other Black / African / Caribbean background, <i>write in</i></p>
<p>E. Other ethnic group</p> <p><input type="checkbox"/> Arab</p> <p><input type="checkbox"/> Any other ethnic group, <i>write in</i></p>	

1. First language:**2. What is the highest level of education you have completed?**

- ☐ Higher Education & professional/vocational equivalents
- ☐ A levels, vocational level 3 and equivalents
- ☐ GCSE/O Level grade A*-C, vocational level 2 and equivalents
- ☐ Qualifications at level 1 and below
- ☐ Other qualifications: level unknown
- ☐ No qualifications
- ☐ Don't know

3. Which of the following statements best describes your current occupational status. Please select one.

Please note that an option ‘fully retired’ refers to complete withdrawal from work, whereas ‘bridge employment’ refers to any paid work after an individual retires or starts receiving a pension. **If** you select ‘bridge employment’, please state the number of hours you work per week in the brackets provided.

- ☐ Fully retired. I retired on:
- ☐ Bridge employment: job title: for hours per week.
- ☐ In full-time or part time employment
- ☐ Other. Please specify:

If you have chosen the option **“In full-time or part time employment”** please answer the questions in sections **A** (page 4) and **C** (page 6).

If you have chosen the options **“Retired”** or **“Bridge Employment”** please answer the questions in sections **B** (page 5) and **C** (page 6).

If you have chosen the option **“Other”** please answer the questions in section **C** (page 6).

Section A

- 4. Please give a brief description of your current employment. Please indicate the job title, number of hours per week, and if the position was full time/part time, paid/voluntary.**

Job title: _____ for _____ hours per week.

☐ Full time ☐ Part time

☐ Paid ☐ Voluntary

- 5. Please specify when you are planning to retire and indicate the primary reason for it.**

- ☐ Want to spend more time with family and friends/ pursue other interests or hobbies/need a change
- ☐ Health problems
- ☐ No longer being able to cope with the physical demands of your job
- ☐ Caregiving responsibilities
- ☐ Company downsized/moved/closed
- ☐ Forced retirement
- ☐ Lost job and do not have good options for a new one
- ☐ Lost job and do not want to look for a new one
- ☐ Age discrimination
- ☐ Other (*please specify*)

- 6. How many years did you spend in full-time or part-time employment within last 10 years? _____ years**

Section B

- 7. Please give a brief description of your previous employment before retirement. Please indicate the job title, number of hours per week, and if the position was full time/part time, paid/voluntary.**

Job title: _____ for _____ hours per week.

☐ Full time ☐ Part time

☐ Paid ☐ Voluntary

- 8. How long you have you been retired for?**

- 9. What was the primary reason for your retirement?**

- ☐ Wanted to spend more time with family and friends/ pursue other interests hobbies/needed a change
- ☐ Health problems
- ☐ No longer being able to cope with the physical demands of your job
- ☐ Caregiving responsibilities
- ☐ Company downsized/moved/closed
- ☐ Forced retirement
- ☐ Lost job and did not have good options for a new one
- ☐ Lost job and did not want to look for a new one
- ☐ Age discrimination
- ☐ Other (*please specify*)

- 10. How many years did you spend in full-time or part-time employment within last 10 years before your retirement?** _____ years

Section C

11. What is your marital status?

- ☐ Married or domestic partnership
- ☐ Single, never married
- ☐ Widowed
- ☐ Divorced
- ☐ Separated

12. If you are married or have a partner, in what occupation position is your spouse or partner at present?

- ☐ Working ☐ Retired
- ☐ Other (*please specify*)

13. Not counting yourself, how many people live in your household more than six month a year?

14. Which of the following best describes the area you live in?

- ☐ Urban ☐ Suburban ☐ Rural

SECTION 2

Instructions: Below are some statements about feelings and thoughts. Please click **one** box that best describes your experience of each statement **over the last 2 weeks**.

	Item	None of the time	Rarely	Some of the time	Often	All of the time
1	I've been feeling optimistic about the future	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	I've been feeling relaxed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	I've been feeling useful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	I've been dealing with problems well	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	I've been thinking clearly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	I've been feeling close to other people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	I've been able to make up my own mind about things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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Instructions: Please read each of the following items carefully. Please click **one** box to indicate the degree to which each statement is true for you **at this point** in your life.

	Item	Not at all true		Completely true		
1	I feel a sense of choice and freedom in the things I undertake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Most of the things I do feel like "I have to"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	I feel that the people I care about also care about me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	I feel excluded from the group I want to belong to	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	I feel confident that I can do things well	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	I have serious doubts about whether I can do things well	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	I feel that my decisions reflect what I really want	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	I feel forced to do many things I wouldn't choose to do	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	I feel connected with people who care for me, and for whom I care	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	I feel that people who are important to me are cold and distant towards me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	I feel capable at what I do	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	I feel disappointed with many of my performance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	I feel my choices express who I really am	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	I feel pressured to do too many things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	I feel close and connected with other people who are important to me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16	I have the impression that people I spend time with dislike me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17	I feel competent to achieve my goals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18	I feel insecure about my abilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19	I feel I have been doing what really interests me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20	My daily activities feel like a chain of obligations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21	I experience a warm feeling with the people I spend time with	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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22	I feel the relationships I have are just superficial	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23	I feel I can successfully complete difficult tasks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24	I feel like a failure because of the mistakes I make	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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Instructions: Please click **one** box to the right of each statement that best corresponds with how you feel about the statement.

	Statements	Not at all true		Completely true		
1	I experience a general sense of emptiness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	There are plenty of people I can rely on when I have problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	There are many people I can trust completely	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	I miss having people around me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	There are enough people I feel close to	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	I often feel rejected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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Instructions: Now we would like to ask you about the number and frequency of social contacts with your friends and family members and the perceived social support you received from them. Please click **one** box to the right of each question in the tables.

Family: Considering the people to whom you are related by birth, marriage, adoption, et cetera.

	None	One	Two	Three or four	Five to eight	Nine or more
How many relatives do you see or hear from at least once a month?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How many relatives do you feel at ease with that you can talk about private matters?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How many relatives do you feel close to such that you could call on them for help?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Friendships: Considering all of your friends including those who live in your neighbourhood.

	None	One	Two	Three or four	Five to eight	Nine or more
How many of your friends do you see or hear from at least once a month?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How many friends do you feel at ease with that you can talk about private matters?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How many friends do you feel close to such that you could call on them for help?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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Instructions: This following questionnaire asks you to indicate what you generally do and feel when you experience stressful events. Obviously, different events bring out somewhat different responses, but think about what YOU usually do when YOU are under a lot of stress. Then respond to each of the following items by choosing ONE number on your answer sheet for each, using the response choices listed just below. Please try to respond to each item separately in your mind from each other item. Please answer every item.

I usually...

1	2	3	4
don't do this at all	do this a little bit	do this a medium amount	do this a lot

	Items	1	2	3	4
1	I've been turning to work or other activities to take my mind off things.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	I've been concentrating my efforts on doing something about the situation I'm in.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	I've been saying to myself "this isn't real."	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	I've been using alcohol or other drugs to make myself feel better.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	I've been getting emotional support from others.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	I've been giving up trying to deal with it.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	I've been taking action to try to make the situation better.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	I've been refusing to believe that it has happened.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	I've been saying things to let my unpleasant feelings escape.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	I've been getting help and advice from other people.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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11	I've been using alcohol or other drugs to help me get through it.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	I've been trying to see it in a different light, to make it seem more positive.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	I've been criticizing myself.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	I've been trying to come up with a strategy about what to do.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	I've been getting comfort and understanding from someone.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16	I've been giving up the attempt to cope.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17	I've been looking for something good in what is happening.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18	I've been making jokes about it.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19	I've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20	I've been accepting the reality of the fact that it has happened.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21	I've been expressing my negative feelings.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22	I've been trying to find comfort in my religion or spiritual beliefs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23	I've been trying to get advice or help from other people about what to do.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24	I've been learning to live with it.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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25	I've been thinking hard about what steps to take.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26	I've been blaming myself for things that happened.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27	I've been praying or meditating.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28	I've been making fun of the situation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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Instructions: If you had to characterise yourself, which of the following points are important for you? Please check the ONE box to the right of each statement that best corresponds with how you feel about it.

Identity	Very important	Quite important	Somewhat important	Not very important	Not important at all
My nationality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My roles within my family (parent-, grandparenthood etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My marriage / relationships with a partner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My profession or occupation (<i>for retirees</i> : my former profession)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My voluntary work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My physical appearance: e.g. height, weight, and the shape of my body	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My personality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My age	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My life story	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Belonging to associations and organisations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My friends	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My leisure time activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My personal values and belief	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>For retirees</i> : the fact that I am now retired	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6.D Participant Debrief⁸

Study Title: Promoting health and physical activity in older age: retirement as a transition point.

Participant ID number:

Principal Investigator: Anastasiia Fadeeva

Principal Investigator contact details: anastasiia.fadeeva@northumbria.ac.uk

Principal Supervisor: Dr Katherine Baker

1. What is the purpose of the study?

Retirement represents one of the major life transition, and a positive retirement experience is crucial for maintaining physical and psychological health in later life. Adaptation to retirement is a heterogeneous process, and retirement experience may vary not only across individuals but also within individuals over time. There is the evidence that retirees tend to have poorer physical health, greater depression and loneliness, lower life satisfaction and well-being in comparison with workers. However, positive effects of retirement on health and well-being have also been reported. It is important to better understand retirement adjustment and factors leading to more successful retirement experience, as it can provide the knowledge on how to improve the quality of postretirement life. Despite the attempts to investigate the retirement process and perspectives extensively, the research on factors causing different retirement adjustment patterns is limited. It is posited that well-being and retirement experience might be affected by satisfaction/frustration of the basic psychological needs, identity changes, social support, retirement planning, the attitudes towards retirement and ageing, as well as certain demographic and socioeconomic characteristics.

As such, the proposed study aims to develop a more comprehensive understanding of the retirement experience and factors predicting different retirement adjustment.

2. How will I find out about the results?

Every year of the study, a summary of the annual findings will be sent to all participants using email or postal address provided at the beginning of the study.

3. What will happen to the information I have provided?

You will be assigned a unique participant code that will be used for identification purposes throughout the study. Your name and other personal details will not be associated with your data. Only the research team will have an access to any identifiable information. Paper records will be stored in a locked filing cabinet and electronic information will be stored on a password-protected computer. Any personal details will

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be kept separate from other data and will be treated in accordance with the Data Protection Act.

4. How will the results be disseminated?

The data collected in this study will be used for a Postgraduate Thesis. It is anticipated that the findings of the study may be published in a peer-reviewed journal and presented at conferences. Any information and data gathered during this research study will only be available to the research team identified in the information sheet. Should the research be presented or published in any form, all results will be anonymised and it will not be possible to identify your personal information or data as belonging to you.

5. Have I been deceived in any way during the project?

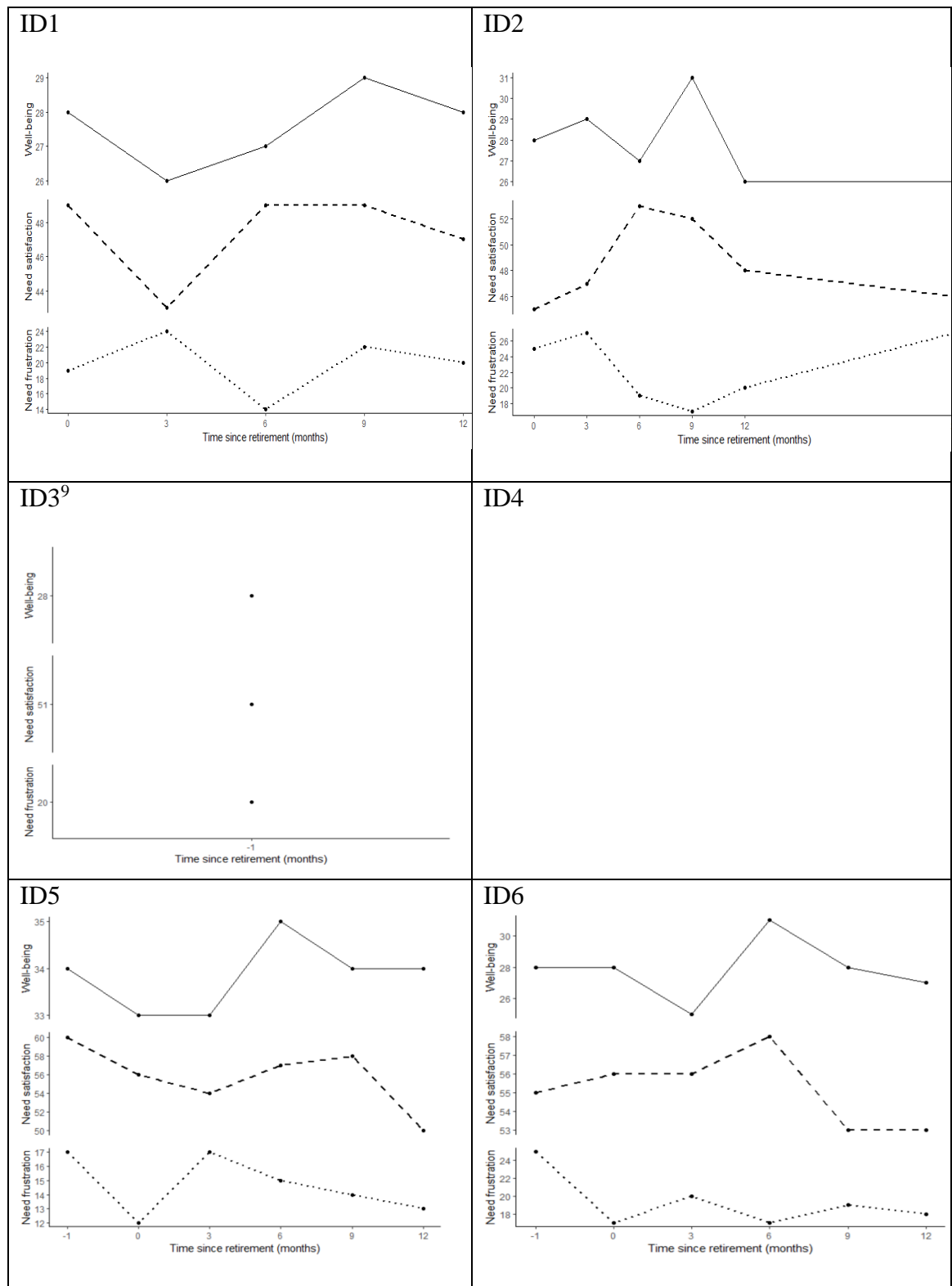
No

6. If I change my mind and wish to withdraw the information I have provided, how do I do this?

If you wish to withdraw, simply contact Anastasiia Fadeeva anastasiia.fadeeva@northumbria.ac.uk or alternatively Dr Katherine Baker katherine.baker@northumbria.ac.uk

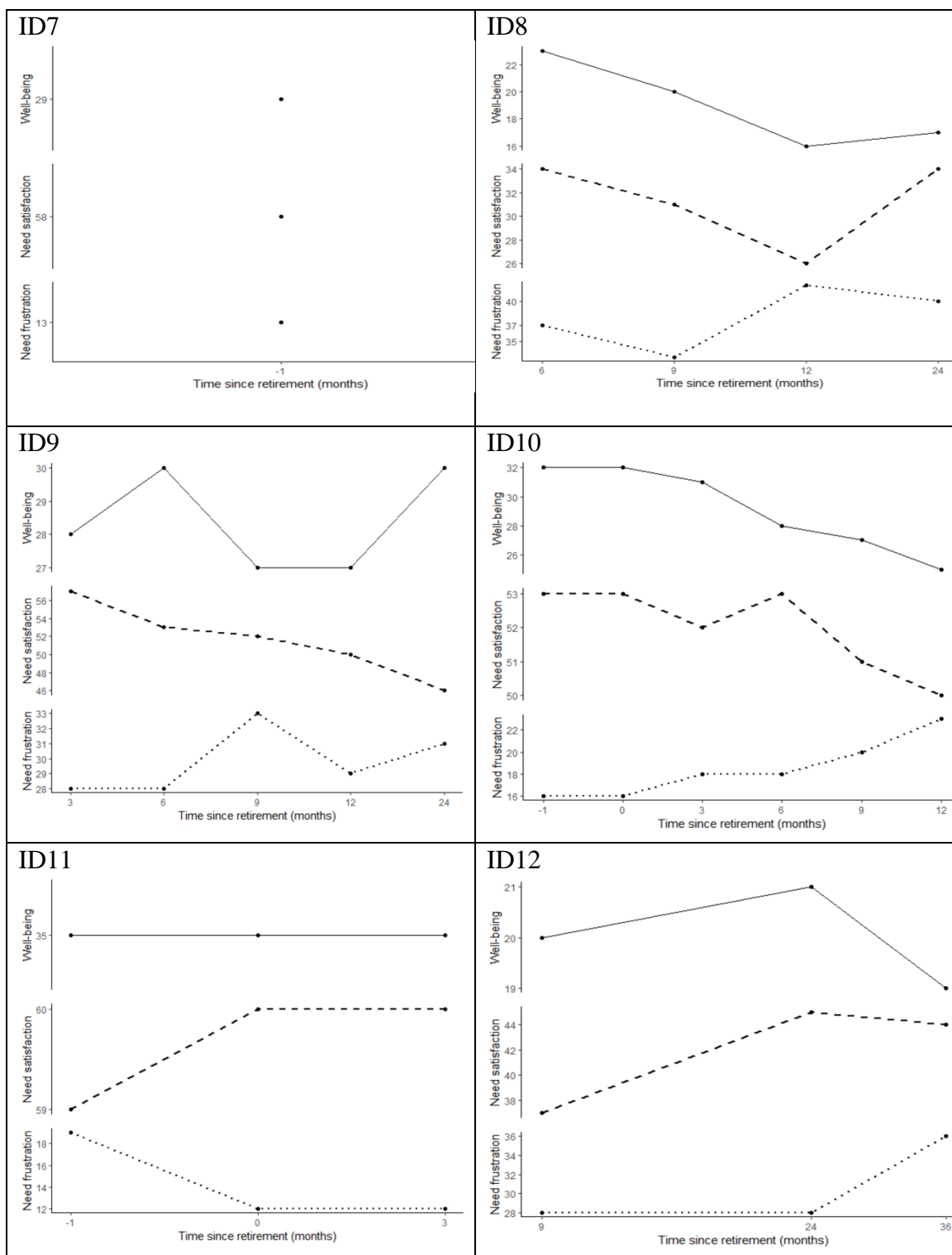
If you have any concern or worries concerning the way in which this research has been conducted, or if you have requested, but did not receive feedback from the principal investigator concerning the general outcomes of the study after the study has concluded, then please contact Chair of the Faculty of Health and Life Sciences Ethics Committee, Northumberland Building, Northumbria University, Newcastle upon Tyne, NE1 8ST.

6.E Changes in Well-Being, Need Satisfaction, and Need Frustration over Retirement Transition

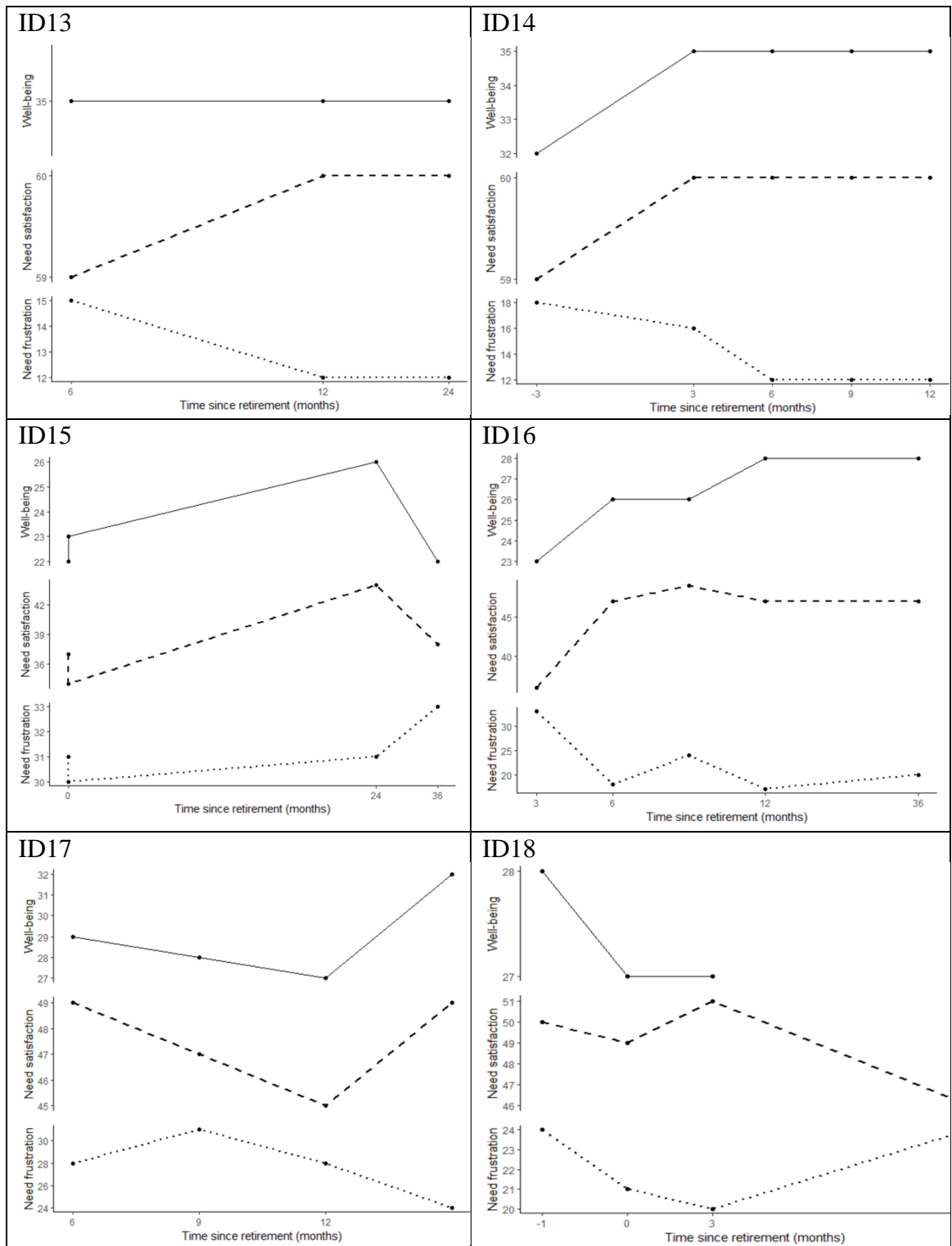


⁹ ID3, ID7 – Participants only had one data collection point

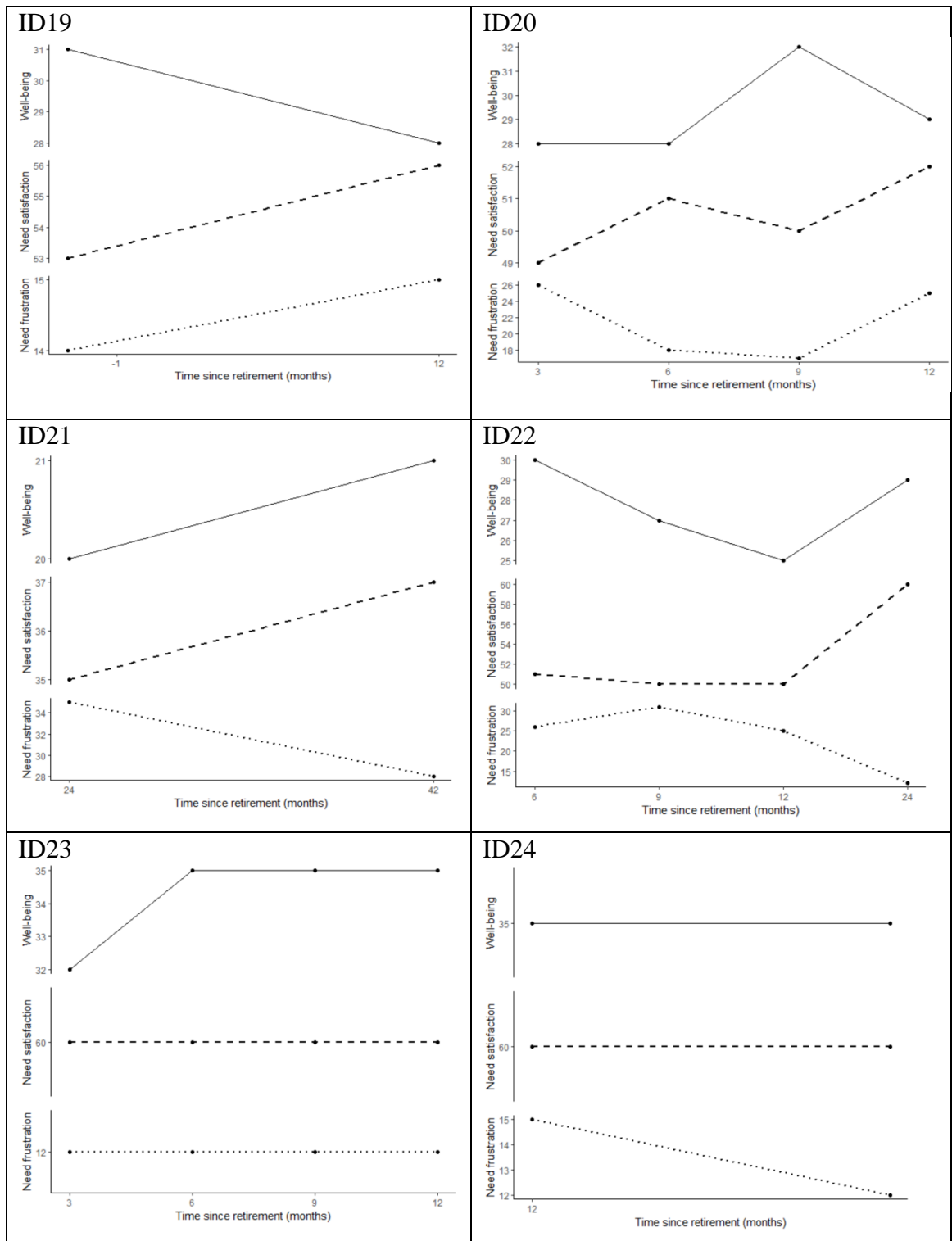
ID4 - There were missing answers for the questions, and therefore plots could not be built.



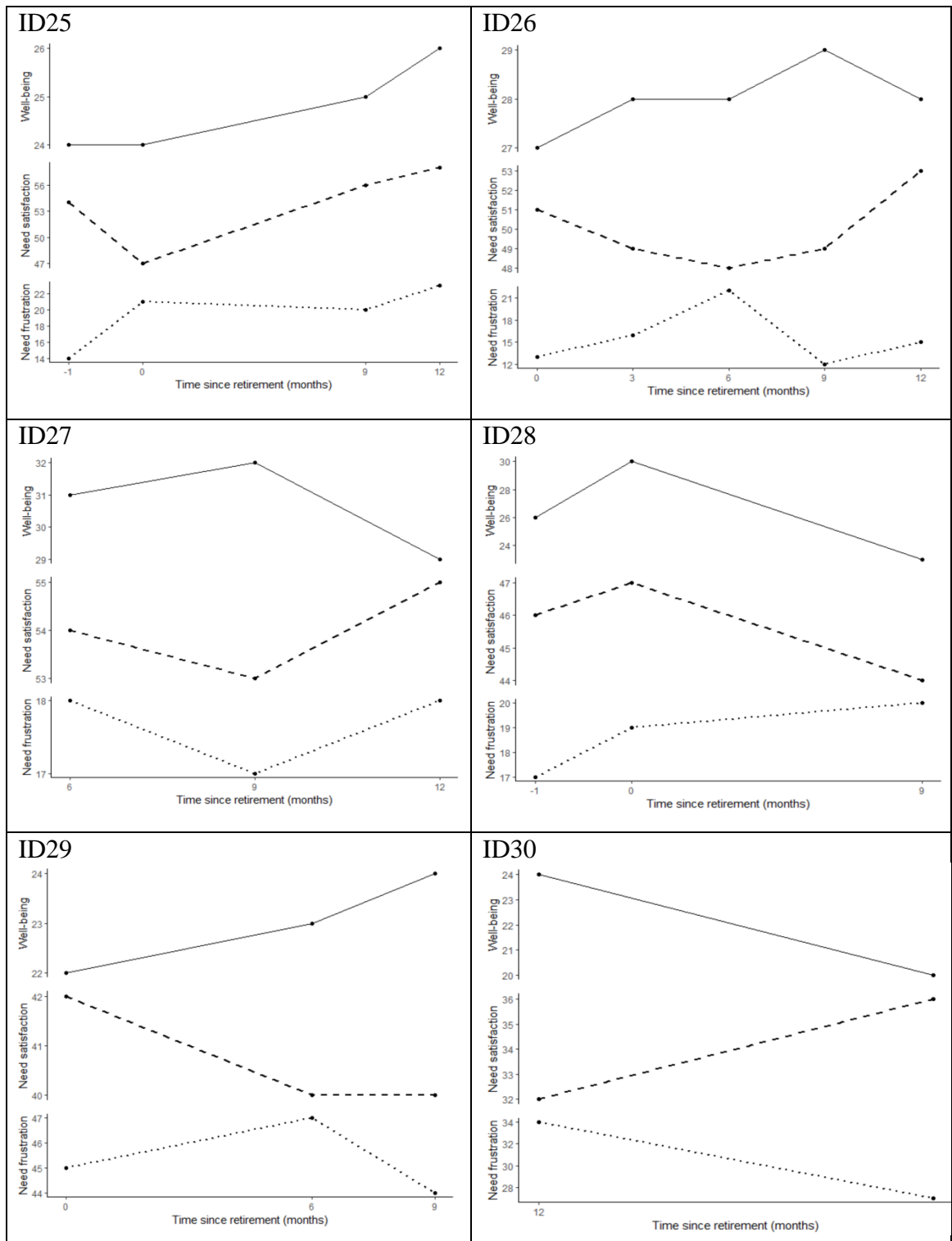
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6.F Estimates from multilevel modelling with subjective well-being regressed on autonomy, relatedness, and competence satisfaction and frustration

		Model 1	Model 2	Model 3
		<i>B(SE)</i>	<i>B(SE)</i>	<i>B (SE)</i>
Within-person effects	Intercept	28.00 (.84)**	28.19 (.77)**	4.38 (7.39)
	Retirement Time		-.014 (0.039)	-.009 (.03)
	AS			.30 (.16)
	RS			.08 (.14)
	CS			.19 (.16)
	AF			-.01 (.1)
	RF			-.12 (.13)
	CF			-.17(.11)
	AS			.95 (.24)**
	RS			-.13 (.25)
	CS			.57 (.35)
	AF			.03 (.18)
Between-person effects	RF			.09 (.34)
	CF			.10 (.31)
Model summary	Residual variance (within)	1.81	1.62	1.50
	Residual variance (between)	4.34	3.76	1.47
	Deviance Statistic	522.55	516.58	444.03
	ICC (%)	85	84	51

Note. AS Autonomy satisfaction; RS Relatedness satisfaction; CS Competence satisfaction; AF Autonomy frustration; RS Relatedness frustration; CF Competence frustration. * = $p < .05$, ** = $p < .001$

6.G Estimates from multilevel modelling with subjective well-being regressed on total identity, loneliness, social networking, approach and avoidance coping mechanisms

		Model 1 <i>B(SE)</i>	Model 2 <i>B(SE)</i>	Model 3 <i>B(SE)</i>
Within-person effects	Intercept	28.00 (.84)**	28.19 (.77)**	20.04 (19.23)
	Retirement time		-.014 (0.04)	-.09 (.05)
	Identity			.15 (.11)
	Loneliness			-.17 (.11)
	Social networking			.28 (.15)
	Approach coping			-.03 (.08)
	Avoidance coping			.05 (.15)
Between-person effects	Identity			.09 (.28)
	Loneliness			-.22 (.45)
	Social networking			.14 (.21)
	Approach coping			.29 (.15)
	Avoidance coping			-.35 (.37)
Model summary	Residual variance (within)	1.81	1.62	2.16
	Residual variance (between)	4.34	3.76	3.68
	Deviance Statistic	521.41	520.17	180.10
	ICC (%)	85	84	57

Note. * = $p < .05$, ** = $p < .001$

6.H Vignettes Questionnaire

Thank you for agreeing to take part in the research survey!

During the task, you will be asked to complete several widely used psychological measures, read a series of hypothetical situations and respond accordingly. There are no right or wrong answers to the task.

Please complete this document as **accurately and honestly as possible**. There are no right or wrong answers to any of the questions.

The document does contain several pages of questions, so please feel free to **take a break** at any time.

If you have any questions, please contact the primary researcher: Anastasiia Fadeeva.

Please turn the page over to complete the questionnaire.

Demographic Details

1. Date of birth:

2. Age:

3. Sex: Male ☐ Female ☐ Other ☐ Prefer not to answer ☐

4. How would you best describe your ethnic origin?

<p>B. White</p> <p><input type="checkbox"/> English/Welsh/Scottish/ Northern Irish/British</p> <p><input type="checkbox"/> Irish</p> <p><input type="checkbox"/> Gypsy or Irish Traveller</p> <p><input type="checkbox"/> Any other White background, <i>write in</i></p>	<p>B. Mixed / multiple ethnic groups</p> <p><input type="checkbox"/> White and Black Caribbean</p> <p><input type="checkbox"/> White and Black African</p> <p><input type="checkbox"/> White and Asian</p> <p><input type="checkbox"/> Any other Mixed / multiple ethnic background, <i>write in</i></p>
<p>C. Asian / Asian British</p> <p><input type="checkbox"/> Indian</p> <p><input type="checkbox"/> Pakistani</p> <p><input type="checkbox"/> Bangladeshi</p> <p><input type="checkbox"/> Chinese</p> <p><input type="checkbox"/> Any other Asian background, <i>write in</i></p>	<p>D. Black / African / Caribbean / Black British</p> <p><input type="checkbox"/> African</p> <p><input type="checkbox"/> Caribbean</p> <p>Any other Black / African / Caribbean background, <i>write in</i></p>
<p>E. Other ethnic group</p> <p><input type="checkbox"/> Arab</p> <p><input type="checkbox"/> Any other ethnic group, <i>write in</i></p>	

5. First language:

6. What is the highest level of education you have completed?

- ☐ Higher Education & professional/vocational equivalents
- ☐ A levels, vocational level 3 and equivalents
- ☐ GCSE/O Level grade A*-C, vocational level 2 and equivalents
- ☐ Qualifications at level 1 and below
- ☐ Other qualifications: level unknown
- ☐ No qualifications
- ☐ Don't know

7. Please indicate how long you have you been retired for:

8. Date:

To be completed by the researcher: Participant Number:

Instructions: Please read each of the brief hypothetical situations below. For each, you will be asked to respond to twelve questions, about how you would feel or behave in that situation. You should respond to each item on a scale from 1 (I would not at all feel this way) to 7 (I would very strongly feel this way). There are no right or wrong responses to these situations, please be as honest as possible.

Situation 1

You have retired and decided to relocate to be closer to your family. However, your family members are busy at work during the weekdays and do not make time to visit you on the weekends. Your friends live far away and do not make time to talk to you on the phone. You feel very isolated and lonely. You try to make friends in your new neighborhood, but most people have already formed tight social groups- they do not invite you to local events and you felt out of place when you tried to join a local club. You feel very excluded and do not think you will be accepted as a part of their community.

I would feel:	Not at all Very strongly						
	1	2	3	4	5	6	7
...incapable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...pressured to behave in certain ways	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...rejected, dismissed, or disliked	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...free to behave how I wish	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...a sense of accomplishment from adapting to a new life	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...accepted, respected, or liked	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In the future, I would:	Not at all Very strongly						
	1	2	3	4	5	6	7
...want to be alone; I wouldn't try to fit in anymore	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...find ways to do what truly interests me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...stick to my family leisure time plans instead of looking for new opportunities that would be interesting for me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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...want to socialise with my friends/family/neighbours	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... give up trying to prove that I can adapt to this new life style	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...find ways to prove to myself that I am able to adapt a new life successfully	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Situation 2

After retiring you feel that you have lost an important part of your life which allowed you to feel useful and demonstrate your abilities. You miss the sense of effectiveness and accomplishment you felt from completing your role. You miss being able to appear useful when your friends and family talk about their jobs. You try to fill your spare time and feel more capable by joining a club. You are not very good at the activity as you struggle to pick up the basic skills. The other members try to encourage you, but you feel their feedback is patronising - you are not as good as them.

I would feel:	Not at all Very strongly						
	1	2	3	4	5	6	7
...incapable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...dismissed and not cared for by my family and friends	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...accepted, respected, or liked	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...confident that I could improve my skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...pushed to behave in certain ways	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...able to choose for myself what activities to do	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In the future, I would:	Not at all Very strongly						
	1	2	3	4	5	6	7
...avoid further attempts to choose my own activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...find ways to do what is truly interesting for me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...give up as I'm not going to improve	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...seek support from other members of the club	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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...find ways to improve my skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...avoid contact with others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Situation 3

Having recently retired you are enjoying having more free time - your life no longer revolves around your work schedule. You take advantage of your new freedom by doing things that are of interest to you, doing things that are of interest to you such as going for walks, volunteering at a local organisation, meeting up with friends, or gardening. You consider taking up a new hobby and are impressed by the variety of clubs available in the local area. You tried some of them out without any commitment to join. You realise that since retiring you get to choose how to spend your time and can do what you truly enjoy.

I would feel:	Not at all							Very strongly	
	1	2	3	4	5	6	7		
...pressured to behave in certain ways	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...confident that I could take on and do well at any activity that I undertake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...dismissed and not cared for by family and friends	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...a sense of choice and freedom	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...insecure in my abilities to do all those activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...cared for by family and friends	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In the future, I would:	Not at all							Very strongly	
	1	2	3	4	5	6	7		
...continue to do the activities out of a sense of obligation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...seek out opportunities to socialise with others - spending time with others would be important	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...only attend the activities that truly interest me and wouldn't feel obligated to attend every session	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...try to do my best in chosen activities to achieve a certain level	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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... avoid activities where my abilities would be tested	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...seek activities that were more independent- I don't want to spend time with others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Situation 4

Your doctor has decided that you must start exercising to improve your health. You are referred to an exercise scheme that you have to attend on a weekly basis; the exercise instructor decides on the day, time, and location of every session. During each exercise session, you have to follow the specific plan set by the instructor- you do not get to choose which activities to complete. Following the plan means that you have to complete activities that you do not enjoy or see any benefit in completing.

I would feel:	Not at all Very strongly						
	1	2	3	4	5	6	7
...doubts about my ability to do the exercises	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...cared for by the GP and the exercise instructors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...forced to follow the recommended plan	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...dismissed and not cared for by the GP and the instructor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...capable of doing new exercises	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...that being physically active was something I wanted to do	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In the future, I would:	Not at all Very strongly						
	1	2	3	4	5	6	7
...avoid interaction with the exercise instructor/GP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...follow the recommended plan set by the instructor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...choose to do exercise activities that I find more interesting and enjoyable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...seek for further support from the instructor/GP and interact more with other participants	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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...do the minimum level of physical activity- I'm not focused on demonstrating improvement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...do my best in order to improve my fitness and demonstrate my abilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Situation 5

You are a member of a local social club that allows you to take part in your hobby. Through attending the weekly sessions, you have met lots of new people and made some close friends. You meet up with these friends outside of the club for lunch and day trips. You often invite them around to your house for afternoon tea. These friendships are very important to you - you confide in each other about your lives and offer each other advice and support. You feel as though you can talk to them about anything.

I would feel:	Not at all Very strongly						
	1	2	3	4	5	6	7
...forced to socialise when I didn't want to	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...serious doubts about my ability to make friends- my social skills need improving	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...cared for and happy interacting with like-minded people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...that those people were only socialising with me to be polite	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...that I was free to make my own choices in the situation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...capable in my abilities to socialise with new people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In the future, I would:	Not at all Very strongly						
	1	2	3	4	5	6	7
...allow my friends to make decisions regarding my plans	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...find ways to demonstrate my best qualities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...find ways to do what truly interests me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...arrange to socialise with the group again	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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...avoid activities where my abilities would be tested	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...spend time by myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Situation 6

You volunteer for a local charity organisation - your role includes many responsibilities such as: talking to your community, raising awareness about existing problems, and helping to organise events. You are very passionate about your duties and try to do your best in your new role. Your hard work and commitment have been noticed by your colleagues and the manager of the organisation. Your manager outlines how vital you have been to the ongoing project. They are particularly impressed with your ability to communicate effectively, be proactive, and solve problems. They ask you to become a more active volunteer member by taking on more responsibilities and helping develop other projects in the local area.

I would feel:	Not at all							Very strongly	
	1	2	3	4	5	6	7		
...cared for by the organisation's manager and colleagues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
...doubts about my ability to keep up with the new duties	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
...free to express my ideas and opinions about new duties or organisations' activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
...confident in my ability to perform new duties	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
...the manager didn't care about me and was trying to isolate from others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
...pressured to keep on top	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
In the future, I would:	Not at all							Very strongly	
	1	2	3	4	5	6	7		
...try to do my best in my new role	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
...continue to do what really interests me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
...engage with the new duties out of a sense of obligation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
...seek further discussions with the manager and other members	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

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...do the minimum required to get new tasks out of the way	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...avoid contact with others; spend time by myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Instructions: How well do the following statement describe your personality? Please select the box that best describes your personality.

I see myself as someone who...

	I see myself as someone who ...	Disagree strongly	Disagree a little	Neither agree nor disagree	Agree a little	Agree strongly
1	... is reserved	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	... is generally trusting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	... tends to be lazy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	... is relaxed, handles stress well	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	... has few artistic interests	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	... is outgoing, sociable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	... tends to find fault with others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	... does a thorough job	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	... gets nervous easily	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	... has an active imagination	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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Instructions: Read each pair of statements below and click (or highlight) the **one** that comes closest to describing your feelings and beliefs about yourself. You may feel that neither statement describes you well, but pick the one that comes closest. **Please complete all pairs.**

1	<input type="checkbox"/> I really like to be the center of attention <input type="checkbox"/> It makes me uncomfortable to be the center of attention
2	<input type="checkbox"/> I am no better or worse than most people <input type="checkbox"/> I think I am a special person
3	<input type="checkbox"/> Everybody likes to hear my stories <input type="checkbox"/> Sometimes I tell good stories
4	<input type="checkbox"/> I usually get the respect that I deserve <input type="checkbox"/> I insist upon getting the respect that is due to me
5	<input type="checkbox"/> I don't mind following orders <input type="checkbox"/> I like having authority over people
6	<input type="checkbox"/> I am going to be a great person <input type="checkbox"/> I hope I am going to be successful
7	<input type="checkbox"/> People sometimes believe what I tell them <input type="checkbox"/> I can make anybody believe anything I want them to
8	<input type="checkbox"/> I expect a great deal from other people <input type="checkbox"/> I like to do things for other people
9	<input type="checkbox"/> I like to be the centre of attention

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	<input type="checkbox"/> I prefer to blend in with the crowd
10	<input type="checkbox"/> I am much like everybody else <input type="checkbox"/> I am an extraordinary person
11	<input type="checkbox"/> I always know what I am doing <input type="checkbox"/> Sometimes I am not sure of what I am doing
12	<input type="checkbox"/> I don't like it when I find myself manipulating people <input type="checkbox"/> I find it easy to manipulate people
13	<input type="checkbox"/> Being an authority doesn't mean that much to me <input type="checkbox"/> People always seem to recognise my authority
14	<input type="checkbox"/> I know that I am good because everybody keeps telling me so <input type="checkbox"/> When people compliment me I sometimes get embarrassed
15	<input type="checkbox"/> I try not to be a show off <input type="checkbox"/> I am apt to show off if I get the chance
16	<input type="checkbox"/> I am more capable than other people <input type="checkbox"/> There is a lot that I can learn from other people

Instructions: Please answer the following question by deciding to what extent each item is characteristic of your feelings and behaviour. Use the dropdown menu below (if drop box not available, please use the following 5 point Likert scale: 1 = very uncharacteristic or untrue, disagree; 2 = uncharacteristic; 3 neutral; 4 = characteristic; 5 = very characteristic or true, strongly agree).

1. I can become entirely absorbed in thinking about my personal affairs, my health, my cares or my relations to others

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<input type="checkbox"/> Very uncharacteristic or untrue, strongly disagree
<input type="checkbox"/> Uncharacteristic
<input type="checkbox"/> Neutral
<input type="checkbox"/> Characteristic
<input type="checkbox"/> Very characteristic or true, strongly agree

2. My feelings are easily hurt by ridicule or the slighting remarks of others

<input type="checkbox"/> Very uncharacteristic or untrue, strongly disagree
<input type="checkbox"/> Uncharacteristic
<input type="checkbox"/> Neutral
<input type="checkbox"/> Characteristic
<input type="checkbox"/> Very characteristic or true, strongly agree

3. When I enter a room I often become self-conscious and I feel that the eyes of other are upon me

<input type="checkbox"/> Very uncharacteristic or untrue, strongly disagree
<input type="checkbox"/> Uncharacteristic
<input type="checkbox"/> Neutral
<input type="checkbox"/> Characteristic
<input type="checkbox"/> Very characteristic or true, strongly agree

4. I dislike sharing the credit of an achievement with others

<input type="checkbox"/> Very uncharacteristic or untrue, strongly disagree
<input type="checkbox"/> Uncharacteristic
<input type="checkbox"/> Neutral

APPENDICES

<input type="checkbox"/> Characteristic
<input type="checkbox"/> Very characteristic or true, strongly agree

5. I feel that I have enough on my hands without worrying about other people's troubles

<input type="checkbox"/> Very uncharacteristic or untrue, strongly disagree
<input type="checkbox"/> Uncharacteristic
<input type="checkbox"/> Neutral
<input type="checkbox"/> Characteristic
<input type="checkbox"/> Very characteristic or true, strongly agree

6. I feel that I am temperamentally different from most people

<input type="checkbox"/> Very uncharacteristic or untrue, strongly disagree
<input type="checkbox"/> Uncharacteristic
<input type="checkbox"/> Neutral
<input type="checkbox"/> Characteristic
<input type="checkbox"/> Very characteristic or true, strongly agree

7. I often interpret the remarks of others in a personal way

<input type="checkbox"/> Very uncharacteristic or untrue, strongly disagree
<input type="checkbox"/> Uncharacteristic
<input type="checkbox"/> Neutral
<input type="checkbox"/> Characteristic
<input type="checkbox"/> Very characteristic or true, strongly agree

8. I easily become wrapped up in my own interests and forget the existence of others

<input type="checkbox"/> Very uncharacteristic or untrue, strongly disagree
<input type="checkbox"/> Uncharacteristic
<input type="checkbox"/> Neutral
<input type="checkbox"/> Characteristic
<input type="checkbox"/> Very characteristic or true, strongly agree

9. I dislike being with a group unless I know that I am appreciated by at least one of those present

<input type="checkbox"/> Very uncharacteristic or untrue, strongly disagree
<input type="checkbox"/> Uncharacteristic
<input type="checkbox"/> Neutral
<input type="checkbox"/> Characteristic
<input type="checkbox"/> Very characteristic or true, strongly agree

10. I am secretly “put out” or annoyed when other people come to me with their troubles, asking me for my time and sympathy

<input type="checkbox"/> Very uncharacteristic or untrue, strongly disagree
<input type="checkbox"/> Uncharacteristic
<input type="checkbox"/> Neutral
<input type="checkbox"/> Characteristic
<input type="checkbox"/> Very characteristic or true, strongly agree

Thank you for your time!

Please now read the participant debrief sheet.

APPENDICES

The Research Team is planning to conduct further studies on adaptive retirement. If you would like to be further notified about the next studies, please provide your email address:

6.I Participant Information Sheet¹⁰

Personality and Motivation in Retirement

Before you decide to take part in this research study it is important for you to read this leaflet so you understand **why this study is being carried out and what it will involve**.

Reading this leaflet, discussing it with others, and asking questions you might have will help you decide if you would like to take part.

THE STUDY

What is the purpose of the study?

The aim of this study is to explore how **personality** affects **motivation** in leisure habits and the series of hypothetical situations describing experience of retired adults.

What will I have to do if I take part?

Participation will require you to complete a **questionnaire pack**, which should take around **50 minutes**. You can, if needed, take a short break at any stage of the pack. During the task, you will be asked to complete several **widely used psychological measures**, read a series of **hypothetical situations** and respond accordingly. **There are no right or wrong answers to the task**.

Why have I been invited?

Because you retired once from your employment, and it is predicted that retirement experience might be affected by certain personality characteristics.

Do I have to take part?

You are under **no obligation** to take part and you will not experience any loss of benefit or penalty if you choose not to participate. This information sheet is provided to you to help you make that decision. If you do decide to take part, remember that you can stop being involved in the study at any time without giving a reason.

What are the possible benefits and disadvantages of taking part?

By taking part in this study, you will **contribute to the knowledge** of motivation during retirement. It is hoped that this will help inform our understanding of **what makes for a happy retirement**.

You may find the whole questionnaire quite lengthy. To minimise potential discomfort, you will be given a plenty of time to complete the questionnaire and you can take a 5-minute break during the task if needed.

THE DATA AND MY ANONIMITY

Will my taking part in this study be kept confidential and anonymous?

Your name will not be written on any of the data we collect; you will be assigned a unique participant code that will be used for identification purposes throughout the study. The consent form you have signed will be stored separately from your other data. Only the research team will have an access to any identifiable information. **The data collected from you in this study will be confidential**.

How will my data be stored, and how long will it be stored for?

¹⁰ Vignettes study – Chapter 3

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Paper records will be stored in a **locked filing cabinet** and electronic information will be stored on a **password-protected computer**. All data will be stored for three years in accordance with the General Data Protection Regulation (GDPR), after which it will be destroyed.

What will happen to the results of the study and could personal data collected be used in future research?

The data collected in this study will be used for a **Postgraduate Thesis**. The general findings might be reported in a **scientific journal or presented at a research conference**, however the data will be **anonymised** and you or the data you have provided will not be personally identifiable, unless we have asked for your specific consent for this beforehand. The findings might also be shared with other organisations/institutions that have been involved with the study. We can provide you with a summary of the findings from the study if you contact the researcher at the email address or phone number listed below.

What categories of personal data will be collected and processed in this study?

For the purposes of the study, we will collect and process the information about your date of birth, age, gender, ethnic origin, first language, education level, and how long you have been retired for.

What is the legal basis for processing personal data?

Processing the personal data required for this study is necessary for scientific and historical research purposes.

Who are the recipients or categories of recipients of personal data, if any?

The research team at **Northumbria University** and one external member of the team from **Liverpool John Moores University** will use and process personal data collected in the study.

Who is Organizing and Funding the Study?

Northumbria University.

Who has reviewed this study?

The Faculty of Health and Life Sciences **Research Ethics Committee** at Northumbria University have reviewed the study in order to safeguard your interests, and have granted approval to conduct the study.

What are my rights as a participant in this study?

A right of access to a copy of the information comprised in their personal data (to do so individuals should submit a Subject Access Request); a right in certain circumstances to have inaccurate personal data rectified; and a right to object to decisions being taken by automated means. If you are dissatisfied with the University's processing of personal data, you have the right to complain to the Information Commissioner's Office.

Contact

For further information, to take part in the study, or to remove yourself from the data set please **contact the primary investigator, Anastasiia Fadeeva** at anastasiia.fadeeva@northumbria.ac.uk; +44 01912437018.

Primary Supervisor: Katherine Baker; Katherine.baker@northumbria.ac.uk.

Data Protection Officer: Duncan James; dp.officer@northumbria.ac.uk.

Many thanks for your time.

6.J Informed Consent Form¹¹



Informed Consent

Thank you for considering taking part in this research. If you have any questions please ask members of the research team before you decide whether to take part. You can keep a copy of this Consent Form to refer to at any time. Please confirm:

I have carefully read and understood the Participant Information Sheet. ☐

I have had an opportunity to ask questions and discuss this study and I have received satisfactory answers. ☐

I understand I am free to withdraw from the study at any time, without having to give a reason for withdrawing, and without prejudice. ☐

I agree to take part in this study. ☐

I also consent to the retention of this data under the condition that any subsequent use also be restricted to research projects that have gained ethical approval from Northumbria University. ☐

This information will be held and processed for the following purpose(s):

Personality and Motivation in Retired Adults.

Participant's Name:

Date:

Participant's signature:

Researchers Name: Anastasiia Fadeeva, Dr Laura Thomas, Dr Fiona Ling, Dr Katherine Baker

¹¹ Vignettes study – Chapter 3

6.K Participant Debrief¹²



**Northumbria
University**
NEWCASTLE

Participant Debrief

Personality and Motivation in Retirement

Principal Investigator: Anastasiia Fadeeva

Principal Investigator contact details: anastasiia.fadeeva@northumbria.ac.uk

Principal Supervisor: Dr Katherine Baker

What is the purpose of the study?

You have taken part in research examining the role of **personality** in your **motivation** in the series of hypothetical situations and leisure time behaviour. There is a significant evidence that social environment affects people's motivation in different life situations but recent research has demonstrated the important role of personality characteristics in motivation too (Thomas & Oliver, Under Review). It is also known that **individual differences** affect **adjustment to retirement** and **ageing process**. For example, people low in optimism do not adapt well to activity restrictions caused by ageing (McCrae & Costa, 1986; Williamson, 2002). Understanding how personality affects retired adults' motivation and behaviour in different life scenarios and their leisure habits will help improve our **understanding** of what makes for a **happy retirement**. As such, the research that you have taken part in today is going to explore the role of personality in motivation among retired adults.

How will I find out about the results?

You will be provided with a **summary of the findings** from the study if you **contact the researcher** at the email address or phone number listed below.

What will happen to the information I have provided?

You will be assigned a unique participant code that will be used for identification purposes throughout the study. Your name and other personal details will not be associated with your data. Only the research team will have an access to any identifiable information. Paper records will be stored in a locked filing cabinet and electronic information will be stored on a password protected computer. Any personal details will be kept separate from other data and will be treated in accordance with the Data Protection Act. **The data collected from you in this study will be confidential.**

How will the results be disseminated?

The data collected in this study will be used for a Postgraduate Thesis. The general findings might be reported in a **scientific journal or presented at a research conference**,

¹² Vignettes study – Chapter 3

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however the data will be **anonymised** and you or the data you have provided will not be personally identifiable, unless we have asked for your specific consent for this beforehand. The findings might also be shared with other organizations/institutions that have been involved with the study.

Have I been deceived in any way during the project?

No

If I change my mind and wish to withdraw the information I have provided, how do I do this?

If you wish to withdraw, simply contact Anastasiia Fadeeva anastasiia.fadeeva@northumbria.ac.uk; +44 01912437018 or alternatively Dr Katherine Baker katherine.baker@northumbria.ac.uk.

If you have any concern or worries concerning the way in which this research has been conducted, or if you have requested, but did not receive feedback from the principal investigator concerning the general outcomes of the study after the study has concluded, then please contact Chair of the Faculty of Health and Life Sciences Ethics Committee, Northumberland Building, Northumbria University, Newcastle upon Tyne, NE1 8ST.

6.L Interactions between personality traits and need satisfaction/frustration on need seeking/avoidance behaviours

Figure 1

Interaction between extraversion and level of need frustration on planned need seeking

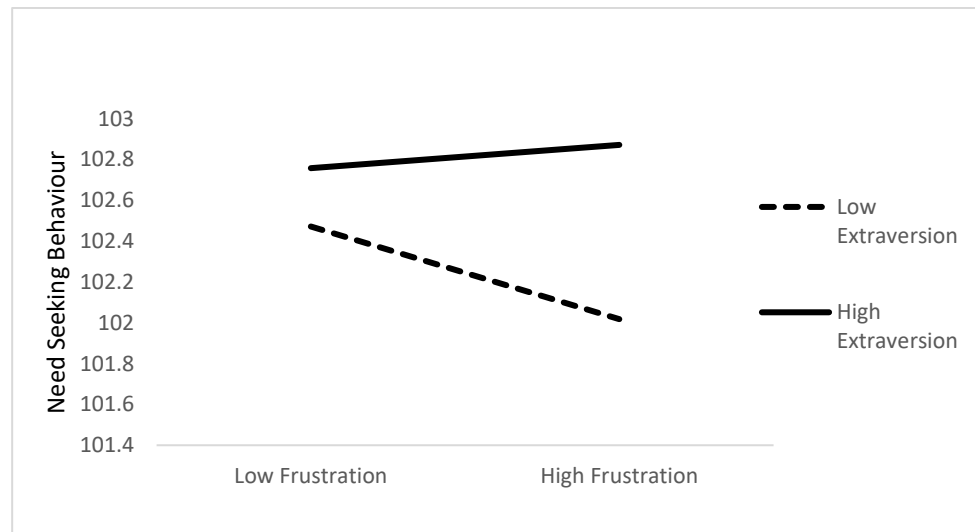


Figure 2

Interaction between covert narcissism and level of need frustration on planned need seeking

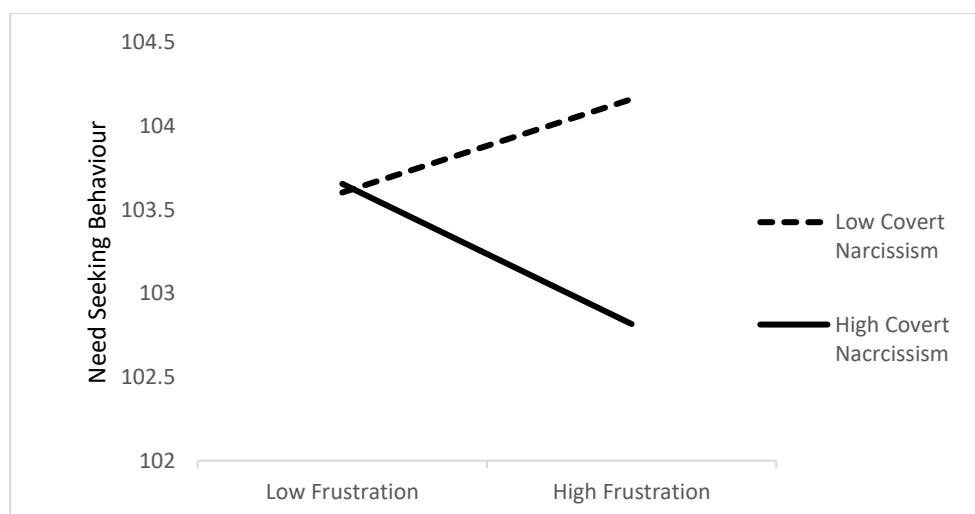


Figure 3

Interaction between neuroticism and level of need frustration on planned need seeking

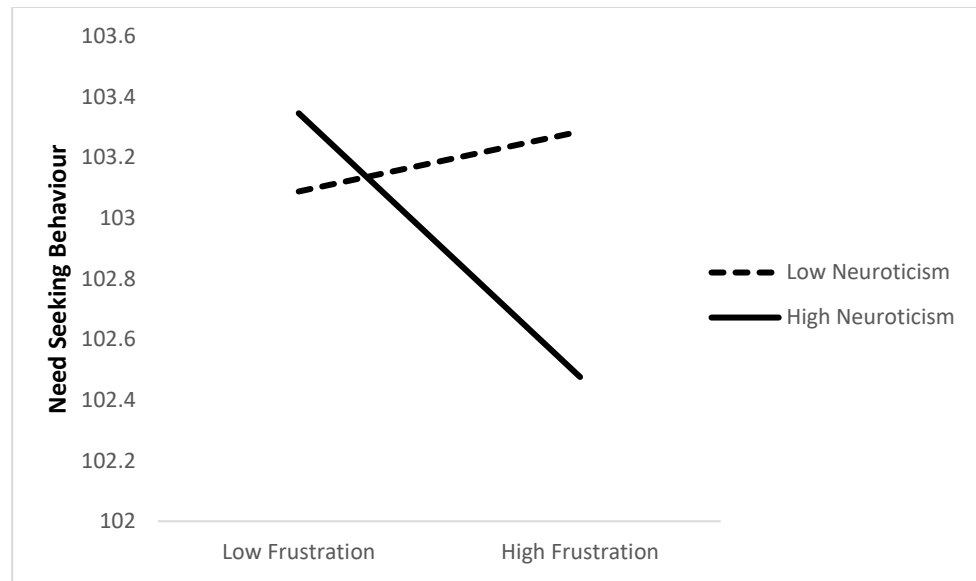


Figure 4

Interaction between conscientiousness and level of need satisfaction on planned need seeking

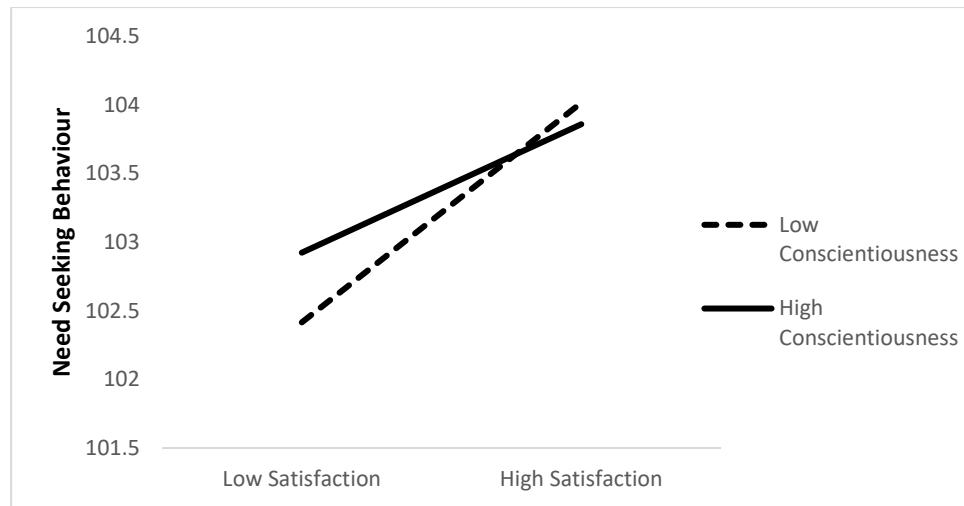


Figure 5

Interaction between extraversion and level of need satisfaction on planned need seeking

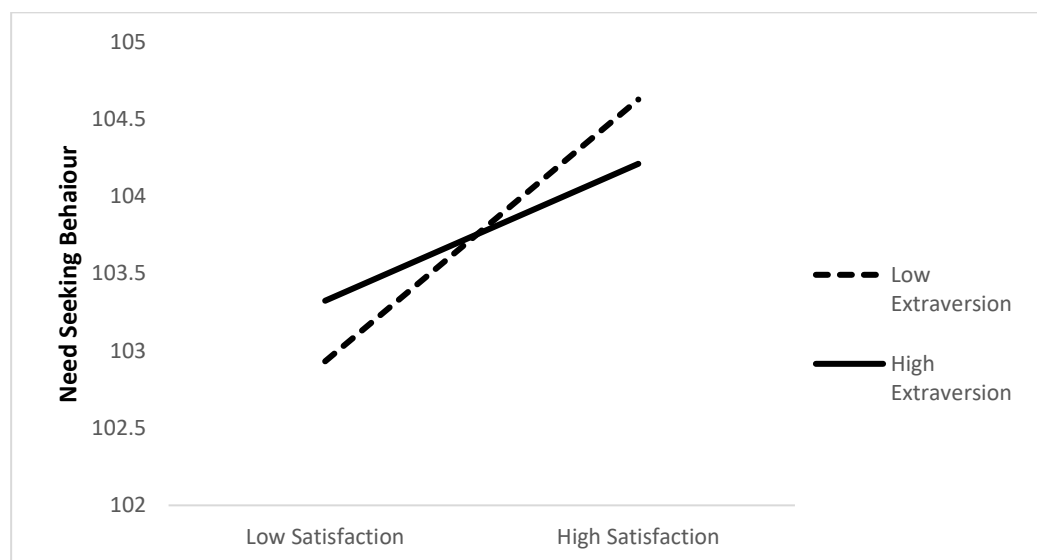


Figure 6

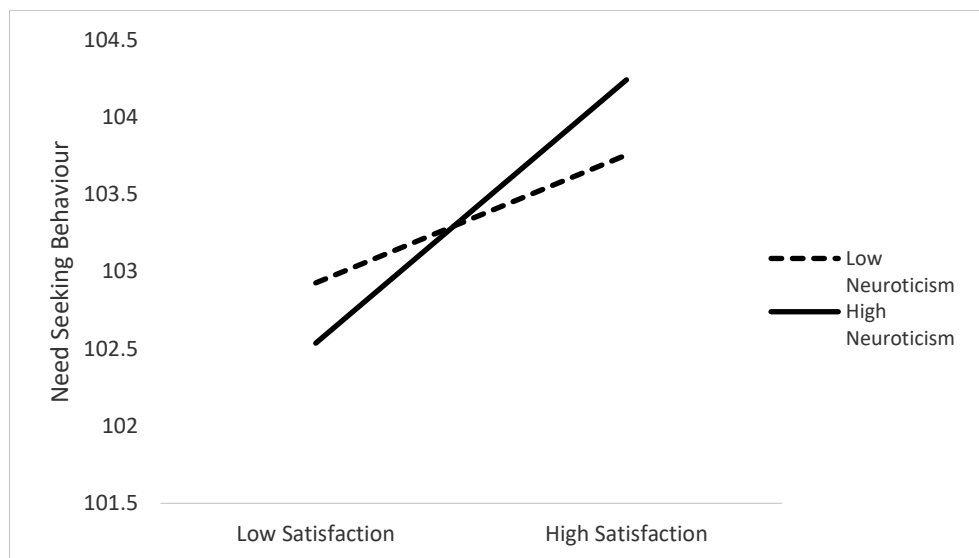
Interaction between covert narcissism and level of need satisfaction on planned need seeking

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Figure 7

Interaction between neuroticism and level of need satisfaction on planned need seeking



6.M Focus groups/interviews guide

1. Employment Time

Can you tell me a bit about your former jobs? Did you enjoy it? How did you feel about your former job? When you were employed what was your lifestyle like? Can you describe your day-to-day routine during employment, in weekdays and weekends? What roles did you take on before retirement, how important were they to you?

Back to the time when you were at work, what thoughts and expectations did you have on what a retiree's life to be like?

Retirement Transition

Why did you retire? How did you feel about that? What was the most challenging for you after you retired? Did you plan much for your retirement? How did you cope with the changes from being employed to being retired? How did your lifestyle change after retirement? Potentially: so do you think you're almost as physically/socially active (or less, or more) than before retirement? How do you feel your roles changed after retirement? What was that experience like? Was there anyone who was particularly involved in your retirement adaptation?

Present Retirement Experience

How do you feel about retirement now? What does your normal week look like? Are there any activities/experiences you would like to try or do more, or less, regularly? Do you miss anything from your pre-retirement life? Are there any changes in your life now compare with the life straight after retirement? How have your views and expectations of retirement and ageing changed since the time before you retired?

What answers would you give to the question "who am I"? How would you describe yourself? How important are these qualities or roles for you? Which is the most important? What are the most important roles and activities to you now?

What 'health' and 'being healthy' mean to you? What behaviour choices would you consider 'healthy'? Do you do anything to be healthier?

Future Retirement Experience

How do you see your life and your lifestyle ahead? How would you like to live your life from now? What might be the priorities for you right now in order to substantiate how you'd like to live? Do you have any plans or projects that you'd like to substantiate? What's the least you'd like to see about yourself in the coming years? How do you think your health might affect your future retirement experience? Is there anything that could help to avoid it? (If participants talk about PA: Why do you think PA is good? Are there any types of PA you would like to engage with? What do you think would help you to do it?)

6.N Participant Information Sheet¹³

Experiences of retirement adjustment: a focus group study

Before you decide to take part in this research study, it is important for you to read this leaflet so you understand **why this study is being carried out and what it will involve**.

Reading this leaflet, discussing it with others, and asking questions you might have will help you decide if you would like to take part.

THE STUDY

What is the purpose of the study?

The aim of this study is to enhance our understanding of retirement process and factors that may contribute to **positive retirement experience**.

What will I have to do if I take part?

If you agree to participate in the study and let the researcher know about your decision, a member of the research team will be in touch with you via **phone** or **email** to discuss any questions that you might have and the possible dates/time for a focus group. Please note that before you come for the study, we will also ask you about your occupational background and how long it's been since your retirement. This information is needed to confirm your eligibility for the study and to allocate you in one of the focus groups. After agreeing on a time slot, you will be asked to attend a focus group discussion consisting of four to six people. The meeting will take place at **Northumbria University, City Campus**.

At the day of the focus group before the discussion starts, you will be asked to sign a hard copy of the Consent Form (please see the form below). During the discussion, you will be asked questions about your experience of retirement. The researcher will record the conversation using a videotape recorder. The purpose of the recording is to allow the researcher to capture all the information discussed during the session, which is important for them to analyse later. The focus group discussion will take approximately **1.5 hours**. At the end of the focus group discussion the facilitator will de-brief you about the research and you will be given an opportunity to ask questions and discuss matters relating to your participation.

You are required to answer the questions based on your personal experience during the focus group discussion. However, you can refuse to answer any questions that you feel uncomfortable with and you can stop the discussion at any time. After you have completed the study, the researcher will give you a debrief sheet explaining the nature of the research, how you can find out about the results, and how you can withdraw your data if you wish.

Why have I been invited?

Because you have been retired from your employment (**blue-collar** or **white-collar** job) either for **up to one year** or for **more than five years**, and your personal experience of retirement will be an important contribution to the knowledge on retirement adjustment.

We've used the following definitions of blue-collar and white-collar jobs:

- A blue-collar worker is a person who performs skilled or unskilled manual labour (e.g. Miners, Plumbers, Electricians, Elevator Installers, Iron & Steel Workers, Painters and many others).
- A white-collar worker typically performs work in an office environment, which may involve sitting at a computer or desk. A white-collar worker is a person who performs

¹³ Focus groups - Chapter 4

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professional, managerial, or administrative work (e.g. Doctors, Financial Managers, Computer Programmers, Certified Public Accountants, Restaurant Managers, Administrative Assistants, Pharmacists etc.)

Do I have to take part?

You are under **no obligation** to take part and you will not experience any loss of benefit or penalty if you choose not to participate. This information sheet is provided to you to help you make that decision. If you do decide to take part, remember that you can stop being involved in the study at any time without giving a reason.

What are the possible benefits and disadvantages of taking part?

By taking part in this study, you will **contribute to the knowledge** on factors predicting different retirement experiences. It is hoped that this will help inform our understanding of **what makes for positive retirement experiences**. To compensate for your time, you will receive **£10** into Eldon Square voucher for taking part.

We do not plan to cover any sensitive or embarrassing issues during the discussion. However, you can refuse to answer any questions that you feel uncomfortable with, or you can leave the discussion anytime. Also, if the discussion cause any negative emotions or distress for you, the research team can provide you with the contact details of the nearest support groups or you can choose to attend a free one-to-one consultation with one of the team members who is a chartered psychologist.

THE DATA AND MY ANONIMITY

Will my taking part in this study be kept confidential and anonymous?

Your name will not be written on any of the data we collect; you will be assigned a unique participant code that will be used for identification purposes throughout the study. Your name will not be written on the recordings, or on the typed up versions of your discussions from the focus group, and your name will not appear in any reports or documents resulting from this study. The consent form you have signed will be stored separately from your other data. Only the research team will have an access to any identifiable information. All recordings will be deleted once transcribed. **The data collected from you in this study will be confidential.**

You will not be identified in the recordings – you can choose a nickname at the start of the focus group and we will refer to you by the chosen name throughout. We will not tell anyone that you have taken part in the focus group, although there is of course a possibility that another member of the group might recognise you. In addition, all participants in the focus group will be asked to respect the **confidentiality of their fellow participants**. We will ask you to sign below to indicate that you will keep all comments made during the focus group confidential and not discuss what happened during the focus group outside the meeting.

If you decide to take part you are still free to withdraw from the study at any time and you don't have to give a reason. Please note though that if you withdraw from the study once the focus group recording has been started, any comments that you make will be included. We won't be able to identify who has said what on the recording so won't be able to omit your comments even if you have withdrawn from the study. However, all the data from the recordings will be anonymised so it won't be possible to identify participants and whatever you will say during the focus group won't be associated with your name.

How will my data be stored, and how long will it be stored for?

All the data including the typed up transcripts from the focus group and your consent forms will be stored in a **locked filing cabinet**. All electronic data; including the recordings from the

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discussion and electronic information will be stored on a **password-protected computer**. All data will be stored for three years in accordance with the General Data Protection Regulation (GDPR), after which it will be destroyed.

What will happen to the results of the study and could personal data collected be used in future research?

The data collected in this study will be used for a **Postgraduate Thesis**. The general findings might be reported in a **scientific journal or presented at a research conference**, however the data will be **anonymised** and you or the data you have provided will not be personally identifiable, unless we have asked for your specific consent for this beforehand. The findings might also be shared with other organisations/institutions that have been involved with the study. We can provide you with a summary of the findings from the study if you contact the researcher at the email address or phone number listed below.

What categories of personal data will be collected and processed in this study?

For the purposes of the study, we will collect and process the information about your age, gender, ethnic origin, job nature and occupation, and how long you have been retired for.

What is the legal basis for processing personal data?

Processing the personal data required for this study is necessary for scientific and historical research purposes.

Who are the recipients or categories of recipients of personal data, if any?

The research team at **Northumbria University** and one external member of the team from **Liverpool John Moores University** will use and process personal data collected in the study.

Who is organising and funding the study?

Northumbria University.

Who has reviewed this study?

The Faculty of Health and Life Sciences **Research Ethics Committee** at Northumbria University have reviewed the study in order to safeguard your interests, and have granted approval to conduct the study.

What are my rights as a participant in this study?

A right of access to a copy of the information comprised in their personal data (to do so individuals should submit a Subject Access Request); a right in certain circumstances to have inaccurate personal data rectified; and a right to object to decisions being taken by automated means. If you are dissatisfied with the University's processing of personal data, you have the right to complain to the Information Commissioner's Office.

Contact

For further information, to take part in the study, or to remove yourself from the data set please **contact the primary investigator, Anastasiia Fadeeva** at anastasiia.fadeeva@northumbria.ac.uk; +44 01912437018.

Primary Supervisor: Katherine Baker; Katherine.baker@northumbria.ac.uk.

Data Protection Officer: Duncan James; dp.officer@northumbria.ac.uk

Many thanks for your time.

6.O Participant Information Sheet ¹⁴

Experiences of retirement adjustment

Before you decide to take part in this research study, it is important for you to read this leaflet so you understand **why this study is being carried out and what it will involve**.

Reading this leaflet, discussing it with others, and asking questions you might have will help you decide if you would like to take part.

THE STUDY

What is the purpose of the study?

The aim of this study is to enhance our understanding of retirement process and factors that may contribute to **positive retirement experience**.

What will I have to do if I take part?

If you agree to participate in the study and let the researcher know about your decision, a member of the research team will be in touch with you via **phone** or **email** to discuss any questions that you might have and the possible dates/time for an interview. Please note that before you come for the study, we will also ask you about your occupational background and how long it's been since your retirement. This information is needed to confirm your eligibility for the study. The interview will take place at **Northumbria University, City Campus**.

At the day of the interview, you will be asked to sign a hard copy of the Consent Form (please see the form below). During the discussion, you will be asked questions about your experience of retirement. The researcher will record the conversation using an audiotape recorder. The purpose of the recording is to allow the researcher to capture all the information discussed during the session, which is important for them to analyse later. The discussion will take approximately **1 hour**. At the end of the interview you will be given an opportunity to ask questions and discuss matters relating to your participation.

You are required to answer the questions based on your personal experience the discussion. However, you can refuse to answer any questions that you feel uncomfortable with and you can stop the discussion at any time. After you have completed the study, the researcher will give you a debrief sheet explaining the nature of the research, how you can find out about the results, and how you can withdraw your data if you wish.

Why have I been invited?

Because you have been retired from your employment (**blue-collar** or **white-collar** job) either for **up to one year** or for **more than five years**, and your personal experience of retirement will be an important contribution to the knowledge on retirement adjustment.

We've used the following definitions of blue-collar and white-collar jobs:

- A blue-collar worker is a person who performs skilled or unskilled manual labour (e.g. Miners, Plumbers, Electricians, Elevator Installers, Iron & Steel Workers, Painters and many others).
- A white-collar worker typically performs work in an office environment, which may involve sitting at a computer or desk. A white-collar worker is a person who performs professional, managerial, or administrative work (e.g. Doctors, Financial Managers, Computer Programmers, Certified Public Accountants, Restaurant Managers, Administrative Assistants, Pharmacists etc.)

¹⁴Individual interviews - Chapter 4

Do I have to take part?

You are under **no obligation** to take part and you will not experience any loss of benefit or penalty if you choose not to participate. This information sheet is provided to you to help you make that decision. If you do decide to take part, remember that you can stop being involved in the study at any time without giving a reason.

What are the possible benefits and disadvantages of taking part?

By taking part in this study, you will **contribute to the knowledge** on factors predicting different retirement experiences. It is hoped that this will help inform our understanding of **what makes for positive retirement experiences**. To compensate for your time, you will receive **£10** into Eldon Square voucher for taking part.

We do not plan to cover any sensitive or embarrassing issues during the discussion. However, you can refuse to answer any questions that you feel uncomfortable with, or you can leave the discussion anytime. Also, if the discussion cause any negative emotions or distress for you, the research team can provide you with the contact details of the nearest support groups or you can choose to attend a free one-to-one consultation with one of the team members who is a chartered psychologist.

THE DATA AND MY ANONIMITY

Will my taking part in this study be kept confidential and anonymous?

Your name will not be written on any of the data we collect; you will be assigned a unique participant code that will be used for identification purposes throughout the study. Your name will not be written on the recordings, or on the typed up versions of your discussions from the interview, and your name will not appear in any reports or documents resulting from this study. The consent form you have signed will be stored separately from your other data. Only the research team will have an access to any identifiable information. All recordings will be deleted once transcribed. **The data collected from you in this study will be confidential.**

If you decide to take part you are still free to withdraw from the study at any time and you don't have to give a reason.

How will my data be stored, and how long will it be stored for?

All the data including the typed up transcripts from the interview and your consent forms will be stored in a **locked filing cabinet**. All electronic data; including the recordings from the discussion and electronic information will be stored on a **password-protected computer**. All data will be stored for three years in accordance with the General Data Protection Regulation (GDPR), after which it will be destroyed.

What will happen to the results of the study and could personal data collected be used in future research?

The data collected in this study will be used for a **Postgraduate Thesis**. The general findings might be reported in a **scientific journal or presented at a research conference**, however the data will be **anonymised** and you or the data you have provided will not be personally identifiable, unless we have asked for your specific consent for this beforehand. The findings might also be shared with other organisations/institutions that have been involved with the

APPENDICES

study. We can provide you with a summary of the findings from the study if you contact the researcher at the email address or phone number listed below.

What categories of personal data will be collected and processed in this study?

For the purposes of the study, we will collect and process the information about your age, gender, ethnic origin, job nature and occupation, and how long you have been retired for.

What is the legal basis for processing personal data?

Processing the personal data required for this study is necessary for scientific and historical research purposes.

Who are the recipients or categories of recipients of personal data, if any?

The research team at [Northumbria University](#) and one external member of the team from [Liverpool John Moores University](#) will use and process personal data collected in the study.

Who is organising and funding the study?

Northumbria University.

Who has reviewed this study?

The Faculty of Health and Life Sciences [Research Ethics Committee](#) at Northumbria University have reviewed the study in order to safeguard your interests, and have granted approval to conduct the study.

What are my rights as a participant in this study?

A right of access to a copy of the information comprised in their personal data (to do so individuals should submit a Subject Access Request); a right in certain circumstances to have inaccurate personal data rectified; and a right to object to decisions being taken by automated means. If you are dissatisfied with the University's processing of personal data, you have the right to complain to the Information Commissioner's Office.

Contact

For further information, to take part in the study, or to remove yourself from the data set please [contact the primary investigator, Anastasiia Fadeeva](#) at anastasiia.fadeeva@northumbria.ac.uk; +44 01912437018.

Primary Supervisor: Katherine Baker; Katherine.baker@northumbria.ac.uk.

Data Protection Officer: Duncan James; dp.officer@northumbria.ac.uk.

Many thanks for your time.

6.P Informed Consent¹⁵



Informed Consent

Project Title: Experiences of retirement adjustment: a focus group study

Principal Investigator: Anastasiia Fadeeva

Thank you for considering taking part in this research. If you have any questions please ask members of the research team before you decide whether to take part. You can keep an electronic copy of this Consent Form to refer to at any time. Please confirm:

- I have carefully read and understood the Participant Information Sheet. ☐
- I have had an opportunity to ask questions and discuss this study and I have received satisfactory answers. ☐
- I understand I am free to withdraw from the study at any time, without having to give a reason for withdrawing, and without prejudice. ☐
- I agree to take part in this study. ☐
- I also consent to the retention of this data under the condition that any subsequent use also be restricted to research projects that have gained ethical approval from Northumbria University. ☐
- I agree to maintain confidentiality of information shared in this focus group ☐

Signature of participant..... Date.....

(NAME IN BLOCK LETTERS).....

Signature of researcher..... Date.....

(NAME IN BLOCK LETTERS).....

¹⁵Focus groups - Chapter 4

6.Q Informed Consent¹⁶



Informed Consent

Project Title: Experiences of retirement adjustment

Principal Investigator: Anastasiia Fadeeva

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Signature of participant..... **Date**.....

(NAME IN BLOCK LETTERS).....

Signature of researcher..... **Date**.....

(NAME IN BLOCK LETTERS).....

¹⁶ Individual interviews – Chapter 4

6.R Consent form for videotaping¹⁷



**Northumbria
University**
NEWCASTLE

FOR USE WHEN PHOTOGRAPHS/VIDEOS/TAPE RECORDINGS WILL BE TAKEN

Project title: Experiences of retirement adjustment: a focus group study

Principal Investigator: Anastasiia Fadeeva

I hereby confirm that I give consent for the following recordings to be made:

Recording	Purpose	Consent
voice recordings	for capturing and analysing participants' contributions to the discussion	
video of facial expressions	for capturing and analysing emotional reactions in addition to verbal expressions	

Clause A: I understand that other individuals may be exposed to the recording(s) and be asked to provide ratings/judgments. The outcome of such ratings/judgments will not be conveyed to me. My name or other personal information will never be associated with the recording(s).

Tick or initial the box to indicate your consent to Clause A ☐

Clause B: I understand that the recording(s) may be used for research purposes and transcripts of the recordings may be presented to researchers in a research context. My name or other personal information will never be associated with the recording(s).

Tick or initial the box to indicate your consent to Clause B ☐

Clause C: I understand that the transcripts of the recording(s) may be published in an appropriate journal/textbook, **which would automatically mean that the recordings would potentially be available worldwide**. My name or other personal information will never be associated with the recording(s). I understand that I have the right to withdraw consent at any time prior to publication, but that once the recording(s) are in the public domain there may be no opportunity for the effective withdrawal of consent

Tick or initial the box to indicate your consent to Clause C ☐

APPENDICES

Clause D: I also consent to the retention of this data under the condition that any subsequent use also be restricted to research projects that have gained ethical approval from Northumbria University.

Tick or initial the box to indicate your consent to Clause D ☐

Signature of participant..... Date.....
(NAME IN BLOCK LETTERS).....

Signature of researcher..... Date.....
(NAME IN BLOCK LETTERS).....

6.S Participant Debrief¹⁸

Participant Debrief

Principal Investigator: Anastasiia Fadeeva

Principal Investigator contact details: anastasiia.fadeeva@northumbria.ac.uk

Principal Supervisor: Dr Katherine Baker

What is the purpose of the study?

Retirement represents one of the major life transition, and a **positive retirement experience** is crucial for maintaining physical and psychological health in later life. There is the evidence that retirees tend to have poorer physical health, greater depression and loneliness, lower life satisfaction and well-being in comparison with workers. However, positive effects of retirement on health and well-being have also been reported. It is important to better understand retirement adjustment and factors leading to more successful retirement experience, as it can provide the knowledge on **how to improve the quality of postretirement life**. Despite the attempts to investigate the retirement process and perspectives extensively, the research on factors causing different retirement adjustment patterns is limited. It is posited that well-being and retirement experience might be affected by satisfaction/frustration of the basic psychological needs, identity changes, social support, retirement planning, the attitudes towards retirement and ageing, as well as certain demographic and socioeconomic characteristics.

As such, the proposed study aims to develop a **more comprehensive understanding** of the retirement experience and factors predicting **differences in retirement adjustment**.

How will I find out about the results?

You will be provided with **a summary of the findings** from the study if you **contact the researcher** at the email address or phone number listed below.

What will happen to the information I have provided?

You will be assigned a unique participant code that will be used for identification purposes throughout the study. Your name and other personal details will not be associated with your data. Only the research team will have an access to any identifiable information. Paper records will be stored in a locked filing cabinet and electronic information will be stored on a password protected computer. Any personal details will be kept separate from other data and will be treated in accordance with the Data

¹⁸ Focus groups and individual interviews - Chapter 4

APPENDICES

Protection Act. **The data collected from you in this study will be confidential.** All video recordings will be permanently destroyed once transcribed.

How will the results be disseminated?

The data collected in this study will be used for a Postgraduate Thesis. The general findings might be reported in a **scientific journal or presented at a research conference**, however the data will be **anonymised** and you or the data you have provided will not be personally identifiable, unless we have asked for your specific consent for this beforehand. The findings might also be shared with other organisations/institutions that have been involved with the study.

Have I been deceived in any way during the project?

No

If I change my mind and wish to withdraw the information I have provided, how do I do this?

If you wish to withdraw, please contact Anastasiia Fadeeva anastasiia.fadeeva@northumbria.ac.uk; +44 01912437018 or alternatively Dr Katherine Baker katherine.baker@northumbria.ac.uk.

If you have any concern or worries concerning the way in which this research has been conducted, or if you have requested, but did not receive feedback from the principal investigator concerning the general outcomes of the study after the study has concluded, then please contact Chair of the Faculty of Health and Life Sciences Ethics Committee, Northumberland Building, Northumbria University, Newcastle upon Tyne, NE1 8ST.

6.T Participant Information Sheet¹⁹

Designing an intervention to promote physical activity during retirement transition

Before you decide to take part in this research study, it is important for you to read this leaflet so you understand **why this study is being carried out and what it will involve.**

Reading this leaflet, discussing it with others, and asking questions you might have will help you decide if you would like to take part.

THE STUDY

What is the purpose of the study?

The aim of the study is to collaboratively **design an intervention** aiming to promote **physical activity** during **retirement transition**.

What will I have to do if I take part?

If you agree to participate in the study, a member of the research team will be in touch with you via **phone** or **email** to discuss any questions that you might have and the possible dates/time for the workshop. The workshop will take place at **Northumbria University, City Campus**.

Before the workshop, you will receive the **information** on the main issues that will be discussed. During the workshop, you will be asked to **collaboratively develop ideas for a physical activity intervention** that might help to address several issues associated with more positive retirement experiences. You will work in a group with 3-4 other experts working in academia, third-sector organisations, or the public health sector. You will be asked to write the developed ideas on post-it notes or a whiteboard. **At the end of the workshop**, you will be given an opportunity to ask questions and discuss matters relating to your participation. The workshop will last approximately **1.5 hours**. The researchers will listen to the discussions, take notes during the workshop, and collect all the written or drawn materials after the workshop.

The ideas from the workshop **will help to compose an intervention** for stimulating physical activity during retirement transition. The intervention ideas will be presented to recently retired adults and those planning to retire, and their feedback will be collected.

¹⁹ Co-design workshop – Chapter 5

After you have completed the study, the researcher will give you a debrief sheet explaining the nature of the research, how you can find out about the results, and how you can withdraw your data if you wish.

Why have I been invited?

Because the research team believes you have relevant experience, knowledge, and interest in the areas of healthy ageing, retirement adjustment, or behaviour change.

Do I have to take part?

You are under **no obligation** to take part and you will not experience any loss of benefit or penalty if you choose not to participate. This information sheet is provided to you to help you make that decision. If you do decide to take part, remember that you can stop being involved in the study at any time without giving a reason.

What are the possible benefits and disadvantages of taking part?

By taking part in this study, you might help generate the ideas for interventions aiming to increase physical activity level in older people after retirement.

It is not anticipated this study will cause any psychological or physical discomfort.

THE DATA AND MY ANONIMITY

Will my taking part in this study be kept confidential and anonymous?

Your name will not be written on any of the data we collect; you will be assigned a unique participant code that will be used for identification purposes throughout the study. Your name will not appear in any reports or documents resulting from this study but information on the professional backgrounds of the participants might be used. The consent form you have signed will be stored separately from your other data. Only the research team will have an access to any identifiable information. **The data collected from you in this study will be confidential.**

If you decide to take part you are still free to withdraw from the study at any time and you don't have to give a reason.

How will my data be stored, and how long will it be stored for?

All the notes, materials from the workshop and your consent forms will be stored in a **locked filing cabinet**. All electronic data will be stored on a **password-protected computer**. All data will be stored for three years in accordance with the General Data Protection Regulation (GDPR), after which it will be destroyed.

What will happen to the results of the study and could personal data collected be used in future research?

The data collected in this study will be used for a **Postgraduate Thesis**. The general findings might be reported in a **scientific journal or presented at a research conference**, however the data will be **anonymised** and you or the data you have provided will not be personally identifiable, unless we have asked for your specific consent for this beforehand. The findings might also be shared with other organisations/institutions that have been involved with the study. We can provide you with a summary of the findings from the study if you contact the researcher at the email address or phone number listed below.

What categories of personal data will be collected and processed in this study?

For the purposes of the study, we will collect and process the information about your occupational background, work role, and organisation where you work.

What is the legal basis for processing personal data?

Processing the personal data required for this study is necessary for scientific and historical research purposes.

Who are the recipients or categories of recipients of personal data, if any?

The research team at **Northumbria University** and one external member of the team from **Liverpool John Moores University** will use and process personal data collected in the study.

Who is organising and funding the study?

Northumbria University.

Who has reviewed this study?

APPENDICES

The Faculty of Health and Life Sciences **Research Ethics Committee** at Northumbria University have reviewed the study in order to safeguard your interests, and have granted approval to conduct the study.

What are my rights as a participant in this study?

A right of access to a copy of the information comprised in their personal data (to do so individuals should submit a Subject Access Request); a right in certain circumstances to have inaccurate personal data rectified; and a right to object to decisions being taken by automated means. If you are dissatisfied with the University's processing of personal data, you have the right to complain to the Information Commissioner's Office.

Contact

For further information, to take part in the study, or to remove yourself from the data set please **contact the primary investigator, Anastasiia Fadeeva** at anastasiia.fadeeva@northumbria.ac.uk; +44 01912437018.

Primary Supervisor: Katherine Baker;
Katherine.baker@northumbria.ac.uk.

Data Protection Officer: Duncan James; dp.officer@northumbria.ac.uk.

Many thanks for your time.

6.U Informed Consent²⁰



Informed Consent

Project Title: Experiences of retirement adjustment

Principal Investigator: Anastasiia Fadeeva

Thank you for considering taking part in this research. If you have any questions please ask members of the research team before you decide whether to take part. You can keep an electronic copy of this Consent Form to refer to at any time. Please confirm:

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²⁰ Co-design workshops – Chapter 5

APPENDICES

Signature of participant.....

Date.....

**(NAME IN BLOCK
LETTERS).....**

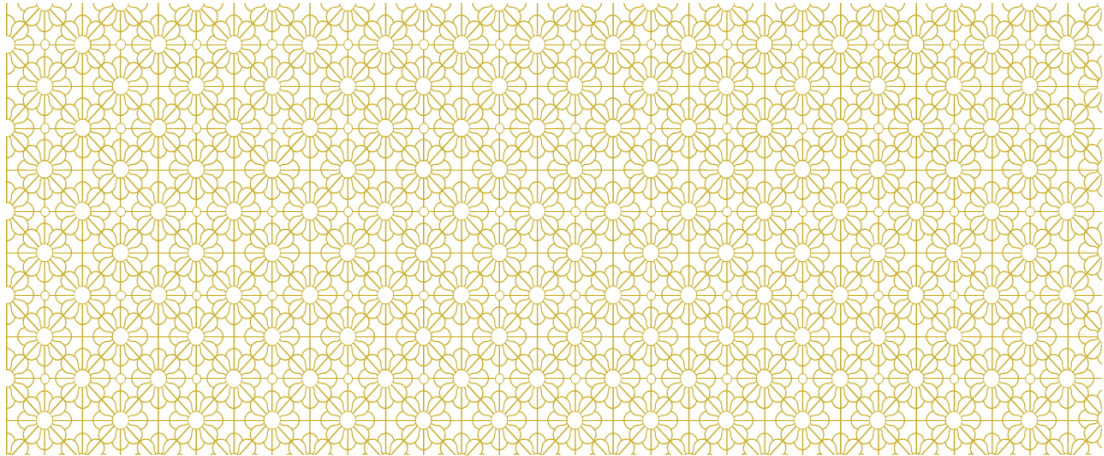
Signature of researcher.....

Date.....

**(NAME IN BLOCK
LETTERS).....**

6.V Workshops Slides

Slide 1



WORKSHOP ON DESIGNING PHYSICAL ACTIVITY INTERVENTION DURING RETIREMENT TRANSITION

Slide 2

WHO AM I?

- A PhD student, Northumbria University
- Interested in retirement adjustment, promoting health and well-being in older adults
- Have conducted three studies on improving the understanding about retirement process and what contributes to retirement adjustment

RESEARCH KEY FINDINGS

- Main components of retirement adjustment: identity reconstruction, social connections, autonomy.

Activities and roles that enable these three constitutes are aspired and contribute to positive retirement experiences.

- The most urgent need for identity reconstruction, urge for autonomy, and habits formation were among recent retirees. Therefore, retirement transition can be an optimal point to promote physical and psychological wellbeing.
- Effects of individuals differences are getting stronger in unfavourable conditions and “maladaptive” traits are more likely to lead to negative outcomes in retirement.



APPENDICES

Slide 5

Increased inactivity with age: 42% of people aged 55 and over are inactive compared to 29% of the adult population (SportEngland, 2016).

Levels of activity - Inactive: Less than 30 minutes a week - Active Lives Survey May 17/18¹⁵

Region	Aged 55-74	Aged 75+
East Midlands	28.6%	54.3%
East	27.6%	53.0%
London	27.4%	49.3%
North East	31.5%	54.2%
North West	29.0%	52.8%
South East	23.9%	47.8%
South West	22.9%	50.2%
West Midlands	32.1%	54.4%
Yorkshire	29.2%	53.7%

Anchor Hanover, 2019

Slide 6

PA FACILITIES IN NORTH EAST

Line Dancing

Line Dancing provides a great chance to stay fit and active, learn new skills, meet new people and make friends, as well as grow in confidence.

Date: Monday 13 Jan 2020

Time: 10:30 am - 11:30 am

Cost: £4.00

Venue Website: svp-blackfriars.org.uk

Venue Telephone: 0191 261 6027

Organiser

Age UK Gateshead in Newcastle

Email: advice@ageukgateshead.org

Venue Address:
Blackfriars Centre
New Bridge Street West
Newcastle upon Tyne
NE1 2TQ

[Find on Google Maps](#)

Information Now

Walking groups



Walking group Tuesdays - 9.30am, Morrison's Car Park, Jarrow, NE32 3LQ
Walking group Tuesday Stroll - 10.30am, Various Locations (please ring for timetable)
Walking group Thursdays - 9.30am, Morrison's Car Park, Jarrow, NE32 3LQ

Please note: bookings are essential for all walks. Please call 456 6903

Choose Better All Inclusive Senior membership

Stay active and social at any age, and bring it to Better thanks to our All Inclusive Senior membership.

If you're 55 and over (or 60 plus, depending on where you live), you can enjoy unlimited off-peak* access to a wide range of fitness activities at all Better leisure centres in your chosen area. That means you can get active in our gyms, [swimming pools](#) and [fitness classes](#), at a competitive price.

You'll also be able to get active and meet new friends at our regular clubs, run by many of our centres across the UK.

And if you're in the mood for competition, you can look forward to our annual club games, where teams from all of our centre club game teams from across the UK meet up and compete to be crowned [Club Games](#) winners for the year.

Better Gym

ACTS, Age Concern Tyneside South

Slide 7



MAY 14, 2019 DAN BLACK

Walking Basketball will take place at the Eagles Community Arena starting from Friday 17 May.

The walking game is aimed at the over 55 age range as part of our growing Active Ageing programme, but everyone is welcome.

The sessions run most Fridays from 12-noon until 1pm and are just £2 per person paid on the day with the Eagles Eats cafe open afterwards to spend the

Newcastle Eagles



Walking Basketball

Whether you are new or returning to the game, come and enjoy a basketball workout with Coach Chris. Open to anyone aged 40 or above.

Date: Monday 13 Jan 2020

Time: 11:00 am - 12:00 pm

Cost: £3

Venue Website: newcastle-eagles.com

Venue Telephone: 0191 245 3881

Information Now

Venue Address:

Eagles Community Foundation
Eagles Community Arena
Scotswood Road
Newcastle upon Tyne
NE4 7AF

[Find on Google Maps](#)

Slide 8

CHALLENGES AND FACILITATORS FOR PA

Challenges:

- ☐ Inconvenient time/location
- ☐ Costs
- ☐ Health issues
- ☐ Not feeling confident enough
- ☐ Don't like exercising
- ☐ Fears (i.e. exercising can damage health, lack of appropriate supervision/instructions)
- ☐ Lack of facilities/equipment for older age
- ☐ Lack of information/don't know where to obtain it
- ☐ Negative experience of social interaction
- ☐ Lacking a partner to play/exercise with
- ☐ Bad weather conditions/lack of daylight

Facilitators:

- ☐ Health Beliefs
- ☐ An opportunity to meet new people
- ☐ Supportive environment (motivating, age friendly, guidance from a coach/instructor)
- ☐ Purposive activity
- ☐ Convenient time/location
- ☐ Good weather conditions

GOAL: ENGAGING RECENTLY RETIRED ADULTS IN PHYSICAL ACTIVITY

□ **How** do we communicate/promote the idea of exercising/physical activity?

Focus on physical activity/exercising/ active lifestyle...? For older adults/retirees/ over 50+...? Main emphasis on the benefits for health/exercising/social component/purpose of time?...

□ **When** is the best time to plan PA in retirement?

□ **How** can we encourage those approaching retirement/recent retirees to plan their free time (not only financial side)? And **how** to promote an idea of exercising as a new healthy way to spend leisure time?

□ **Who** should communicate the idea of planning time and activities in retirement (employers, consulting companies, GP practices...)?

□ **How** to engage more vulnerable groups, those worst likely to approach?

- At risk of social isolation/loneliness? - With health issues? - Lacking Internet literacy/access to Internet? - Lacking finances? - Other groups?

6.W Physical Activity Initiatives Leaflets

Choose Better All Inclusive Senior membership


Stay active and social at any age, and bring it to Better thanks to our All Inclusive Senior membership.

If you're 55, 60 or 65 plus (depending on where you live), you can enjoy unlimited off-peak* access to a wide range of fitness activities at all Better leisure centres in your chosen area. That means you can get active in our gyms, swimming pools and fitness classes, at a competitive price.

You'll also be able to get active and meet new friends at our regular clubs, run by many of our centres across the UK.

And if you're in the mood for competition, you can look forward to our annual club games, where teams from all of our centre club game teams from across the UK meet up and compete to be crowned Club Games winners for the year.

[Join now](#)



Better Gym

Want to be more physically active, but find it hard to start?

Attend

Get Ready, Start Moving, Keep Going

A presentation from **Go4Life**, the exercise and physical activity campaign of the National Institute on Aging at NIH

- ❖ Learn about the 4 types of exercise recommended for adults 50+ and how they can benefit you
- ❖ See how much exercise is recommended for adults
- ❖ See how to exercise safely if you're 50+
- ❖ Get **free** exercise materials tailored for adults 50+
- ❖ Get tips and tools to help you get started and stay on track with exercise



When:

Where:

To Sign Up:

15/01/2020 Gym-free exercises - NHS

You can change your cookie settings at any time using our cookies page ([Link: /our-policies/cookies-policy/](#)).

NHS

([Link: /](#))

Gym-free exercises

Exercise

How much exercise?
([Link: ?tablename=how-much-exercise](#))

Couch to 5K
([Link: ?tablename=couch-to-5k](#))

Exercise tips
([Link: ?tablename=exercise-tips](#))

Fitness guides
([Link: ?tablename=fitness-guides](#))



Try these cheap and fun gym-free activities to improve your health and fitness.

Getting health benefits from physical activity is easier than you think, and it does not have to cost an arm and a leg.

Doing at least 150 minutes a week of [moderate-intensity activity](#) ([Link: /live-well/exercise/#moderate](#)) is enough to keep you feeling fit and healthy.

<https://www.nhs.uk/live-well/exercise/gym-free-exercises/>

1/4

15/01/2020 Gym-free exercises - NHS

If the gym is not your thing, there are many low-cost activities you can do on your own that can get you in shape.

Find something you enjoy that you can easily build into your lifestyle or build on something that's already part of your routine.

Here are some tips for getting active the cheap and easy way.

Walking

Walking is one of the best forms of exercise because it's cheap and accessible to most people.

Increasing the amount you walk is easier than you think. You can make it a social affair by walking with a friend or joining a local walking group.

Walking stimulates the cardiovascular system: the heart, lungs and circulation. It also boosts the endurance of the lower muscles, including the legs and hips.

Read more about [walking for health](#) ([Link: /live-well/exercise/walking-for-health/](#)), including tips on walking to boost your health, making walks fun and staying motivated.

You could also try the free [Active 10 app](#) ([Link: /oneyou/active10/home](#)) to help you get into the habit of walking briskly for 10 minutes every day.

Home exercises

Burn calories, lose weight and feel great with our 10-minute home workout routines:

- exercise your heart and lungs with a [10-minute home cardio workout](#) ([Link: /live-well/exercise/10-minute-home-cardio-workout/](#))
- get into shape with a [10-minute home toning workout](#) ([Link: /live-well/exercise/10-minute-home-toning-workout/](#))
- burn fat from your tummy, hips, thighs and bottom with a [10-minute legs, bums and tums home workout](#) ([Link: /live-well/exercise/10-minute-legs-bums-tums-home-workout/](#))
- lose the droopy booty with a [10-minute firm butt workout](#) ([Link: /live-well/exercise/10-minute-firm-butt-workout/](#))
- tone your tummy muscles with a [10-minute abs workout](#) ([Link: /live-well/exercise/10-minute-abs-workout/](#))
- banish those flabby upper arms with a [10-minute upper arms workout](#) ([Link: /live-well/exercise/10-minute-upper-arms-workout/](#))

<https://www.nhs.uk/live-well/exercise/gym-free-exercises/>

2/4

15/01/2020 Gym-free exercises - NHS

Running and jogging

Running makes more demands on your body than walking, so if you're just starting out, you should build up the speed and duration of your runs gradually.

If you're thinking about taking up running for the first time or have been inactive for a while, you may find [running tips for beginners](#) ([Link: /live-well/exercise/running-tips-for-beginners/](#)) useful.

Thousands of people have learned to run using the [NHS Couch to 5K](#) podcast ([Link: /live-well/exercise/get-running-with-couch-to-5k/](#)). The plan is designed to get complete beginners running 5km in 9 weeks.

Cycling

Cycling is an aerobic exercise that works your lower body and cardiovascular system.

If you plan to cycle regularly, make sure your bike is the right size and the saddle and handlebars are adjusted to suit your height.

As with running or walking, you can make cycling a social activity by riding with friends, family or a cycling group.

For tips for complete beginners, see [cycling for beginners](#) ([Link: /live-well/exercise/cycling-for-beginners/](#)).

Swimming

Swimming is the third most popular type of exercise in the UK after walking and running. Most pools offer lessons if you're a beginner or want to improve.

Swimming exercises the whole body and is a great way to tone up and get trim.

Doing a few lengths involves most of the muscle groups. If you increase the pace, you'll get an aerobic workout, too.

Swimming can also help you lose weight if you swim at a steady and continuous pace throughout the session.

You could join a swimming club or sign up for pool workout sessions, such as aqua aerobics.

For tips for complete beginners, see [swimming for fitness](#) ([Link: /live-well/exercise/swimming-for-fitness/](#)).

<https://www.nhs.uk/live-well/exercise/gym-free-exercises/>

3/4

15/01/2020 Gym-free exercises - NHS

Dancing

Dance is popular among all age groups. It's a skilled activity, but most studios offer classes for all abilities.

Dancing is an aerobic activity that improves your balance and co-ordination. It's suitable for people of all ages, shapes and sizes.

[Find out more about dancing for fitness](#) ([Link: /live-well/exercise/dance-for-fitness/](#))

Badminton

Badminton is one of the most accessible racquet sports. The shuttlecock travels at a relatively low speed, so you do not need a high degree of skill and fitness to begin with.

Badminton is an aerobic activity that works on your lower and upper body. It'll develop your balance, co-ordination, stamina, power and reflexes.

Racquet games can be quite strenuous, so make sure you [warm up](#) ([Link: /live-well/exercise/how-to-warm-up-before-exercising/](#)) before playing.

More ideas

- [Get active your way](#) ([Link: /live-well/exercise/get-active-your-way/](#))
- [Get fit for free](#) ([Link: /live-well/exercise/free-fitness-ideas/](#))
- [Gym-free workouts](#) ([Link: /live-well/exercise/gym-free-workouts/](#))

Page last reviewed: 28 January 2019
Next review due: 28 January 2022

15/01/2020

Exercise in retirement

EXERCISE

There are so many benefits to getting some gentle exercise, and none of us are too old to remember how much fun it is running around. There's still nothing quite like getting out and getting your heart rate up to make you feel alive – and some of the best ideas don't even require Lycra.

In this short film, we meet Malcolm, Dave and Lyn, and Clarissa who tell us why they love playing tennis in their retirement.

WHY IS IT IMPORTANT TO EXERCISE AS I GET OLDER?

Studies have shown that older adults who do physical activity are healthier and less likely to develop long-term conditions like type 2 diabetes, or suffer from osteoporosis or back pain.

As long as you go about it sensibly, exercising has few risks, and certainly fewer than doing very little physical activity as the alternative. The benefits of exercise include:

- Making you physically stronger and therefore less likely to become ill or incapacitated.
- Making it more achievable to manage your weight.
- Providing you with a greater sense of confidence and wellbeing.
- Often helping you sleep better.

WHAT SORT OF PHYSICAL ACTIVITY COULD I TRY?

Any activities like walking, swimming or cycling are good ways to get your heart and lungs going. This kind of aerobic fitness improves circulation and means you'll be more likely to carry on with daily activities as you get older.

You could also try strength training. By lifting anything from shopping bags to light weights at a gym, you could maintain muscle and even improve your balance. This may help you avoid falls in later life.

HOW MUCH EXERCISE SHOULD I DO?

We're not saying you need to be running marathons – little and often is always better than one big burst of activity. If you can, try to aim for thirty minutes, five times a week. It needn't be all done at once, and if you haven't exercised in a while, it's probably best that you work up gently to this level rather than hit it all in one go!

WHAT IF I'M NOT IN THE BEST OF HEALTH?

Talk to your doctor. Your GP can discuss your exercise options with you including simple exercises you can do at home such as the ones recommended by the NHS. Remember, if you ever feel dizzy, short of breath or unwell whilst exercising, stop and seek medical attention immediately.

WHERE CAN I GO TO EXERCISE?

Your local area is likely to have a range of facilities that are run privately or by the local authority. These will include gyms, swimming pools, exercise classes etc. There are a wealth of activities available that enable you to get good physical exercise at your own pace. You can

<https://www.wearejust.co.uk/health-and-lifestyle/physical-wellbeing/exercise/>

1/2

15/01/2020

Exercise in retirement

even go out in the local countryside and do a spot of walking with the ramblers association.

HOW MUCH DOES IT COST?

Taking out membership at a private gym can be expensive – and even off-peak you may have to spend £30 or £40 a month. Local authority sports centres, and local community facilities are likely to offer much cheaper alternatives – and many only require you to pay for the use of the facilities when you need them. The average cost of a swim at your local swimming pool for instance is likely to only be £3-4 and the same for an exercise class. More expensive hobbies that require expensive equipment or specialist tuition will be more, so it's worth finding out what level of commitment you need to make and the cost before you sign up!

THINGS TO THINK ABOUT

[How to spend your leisure time](#)

[Eating healthily in retirement](#)

Line Dancing

Line Dancing provides a great chance to stay fit and active, learn new skills, meet new people and make friends, as well as grow in confidence.

Date: Monday 13 Jan 2020

Time: 10:30 am - 11:30 am

Cost: £4.00

Venue Website: svp-blackfriars.org.uk

Venue Telephone: 0191 261 6027

Venue Address:

Blackfriars Centre
New Bridge Street West
Newcastle upon Tyne
NE1 2TQ

[Find on Google Maps](#)

Organiser

[Age UK Gateshead in Newcastle](#)

[Email: advice@ageukgateshead.org](mailto:advice@ageukgateshead.org)

Information Now

Walking groups



Walking group Tuesdays - 9.30am, Morrison's Car Park, Jarrow, NE32 3LQ

Walking group Tuesday Stroll - 10.30am, Various Locations (please ring for timetable)

Walking group Thursdays - 9.30am, Morrison's Car Park, Jarrow, NE32 3LQ

Please note: bookings are essential for all walks. Please call 456 6903

ACTS, Age Concern Tyneside South website

6.X 'Backcasting' Task Poster Presented to the Experts

Backcasting Intervention

Backcasting is a planning method that starts with identifying a desirable future self and then works backwards to identify steps needed to reach that future self.

How it works

- 1) Ask recent retirees/those approaching retirement to create an *image of their ideal future self* – what they hope to be like in the next 15-20 years.
- 2) Consider the *steps needed to become that ideal future self*. This will involve them developing a *detailed plan* how they would achieve that image step-by-step moving backwards.



Step 1- Future me

I hope to be independent. I hope that I can still drive and attend my clubs. I hope that I play a role in the lives of my children and grand children.

Step 2- Steps needed to become ideal future me








What will I do?
I'll need to stay active- lots of physical activities for my health. Lots of social interaction to keep the brain active.

Who will I do it with?
With my current friends? Will I make new friends? With my family? With my partner/spouse? On my own?

Where will I go?
Activities at home? Make use of the local environment? Local community centres?

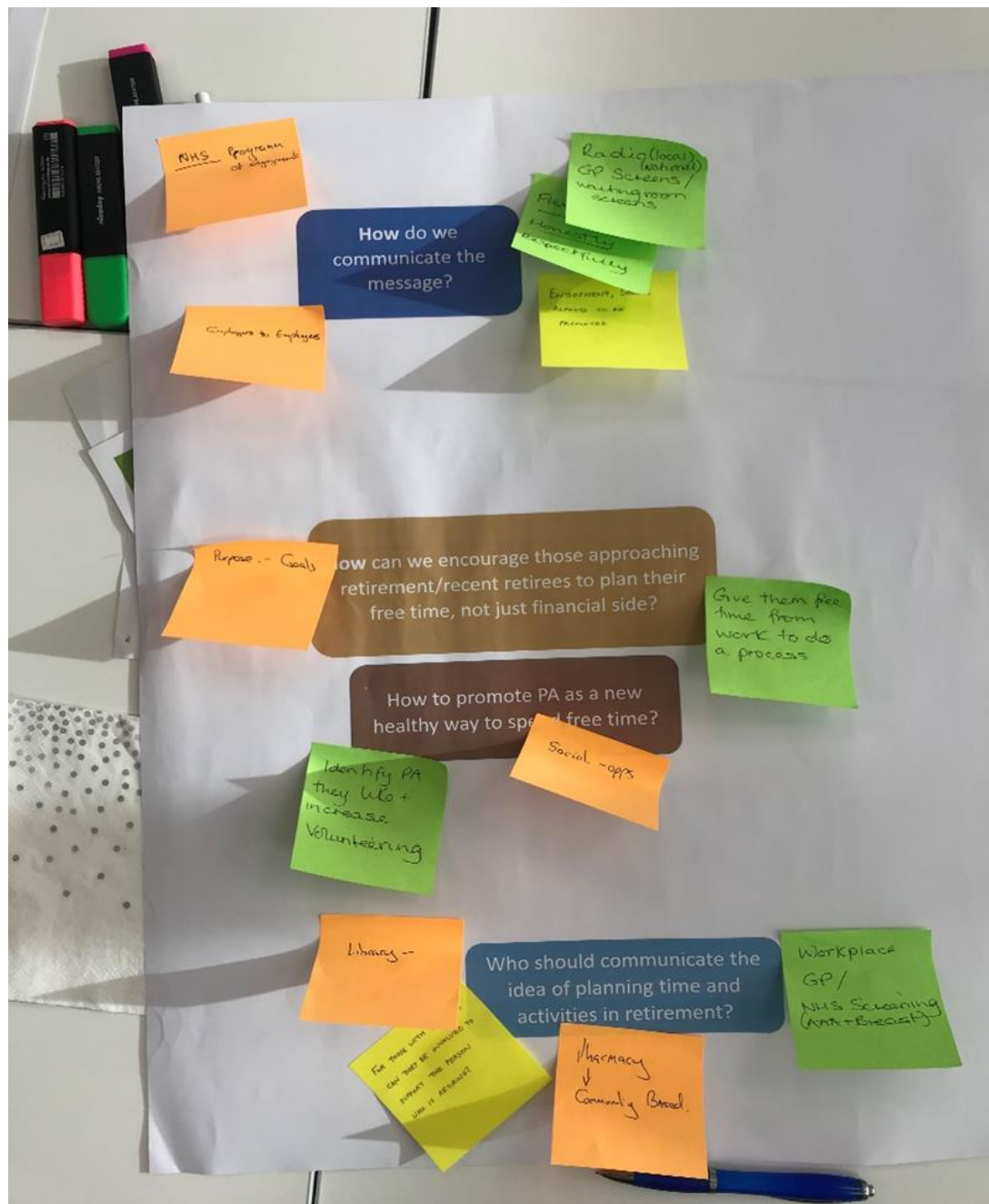
When will I do the activities? What will I start?
When I retire? Before I leave work so it's not a big new change? What days will I have free?

Where do I start?

How do I find out the information that I need to start planning?



6.Y Post-it Notes from the Co-design Workshops



When is the best time to start planning PA in retirement?

2-3 years before retirement

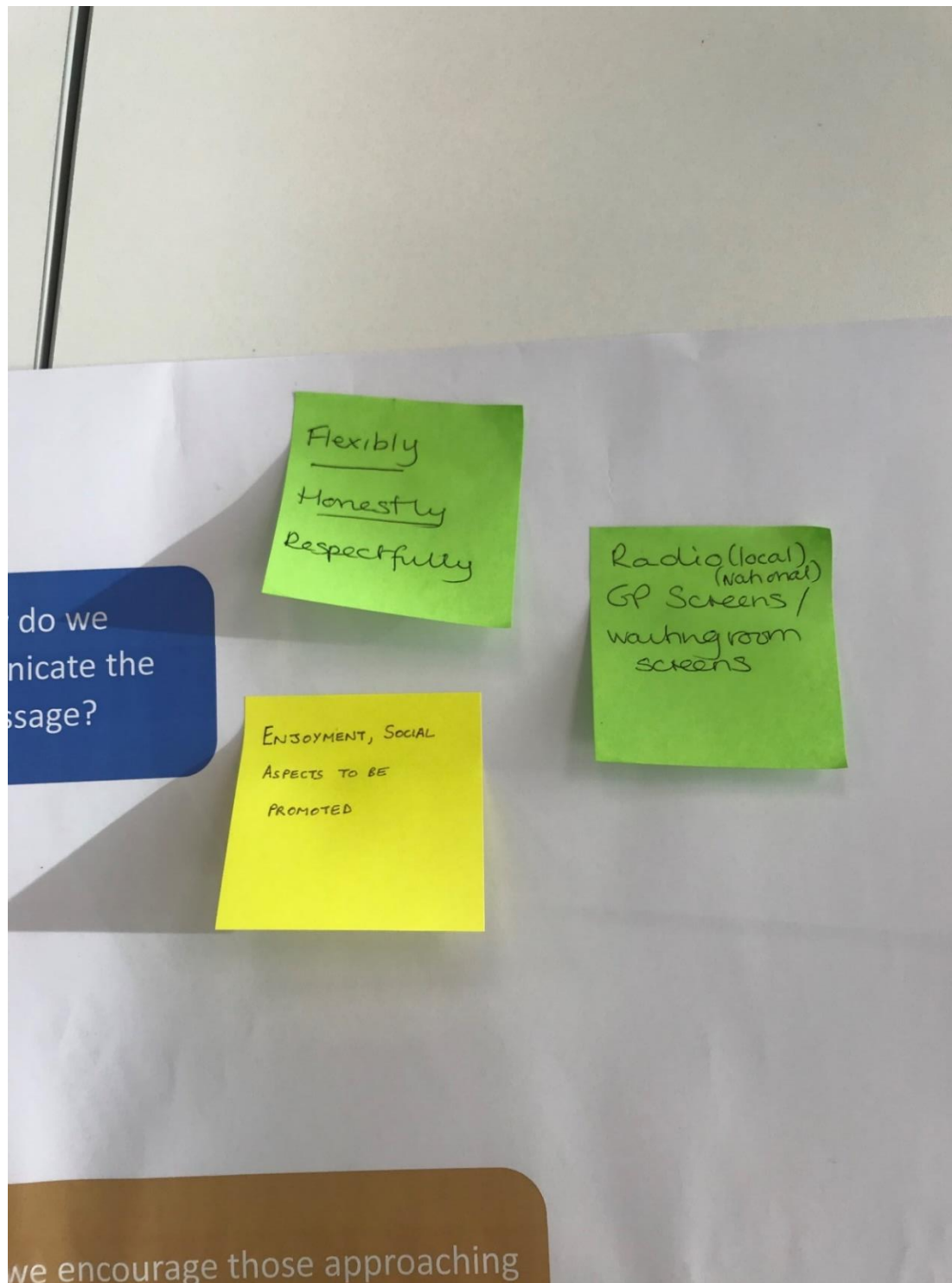
CAN PA PLANNING HELP PEOPLE GIVE WITH THIS TRANSITION, I.E. PROVIDE A FOCUS FOR RETIREMENT? (DECREASE PLAN BEFORE RETIREMENT)

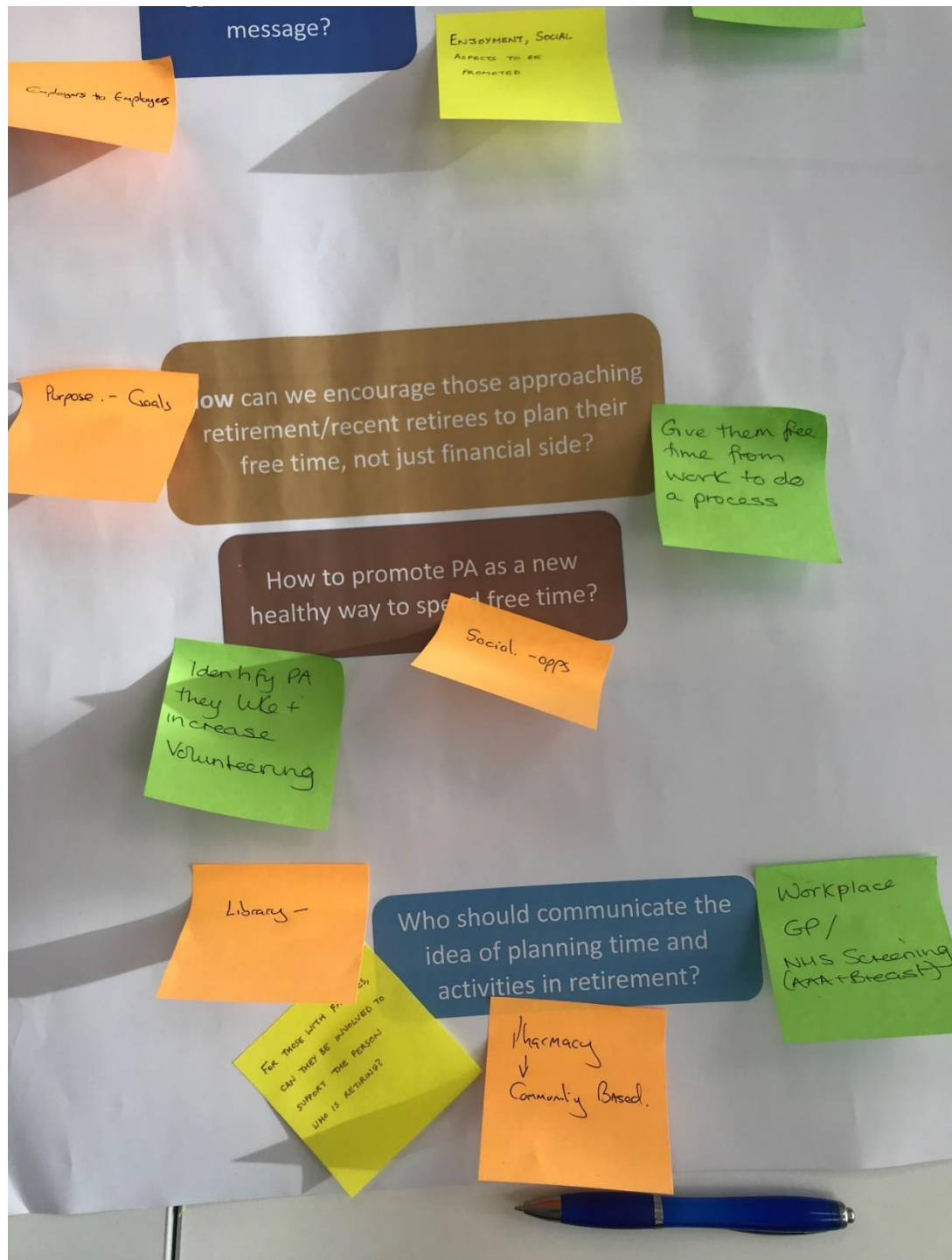
How to engage more those worst likely to approach?

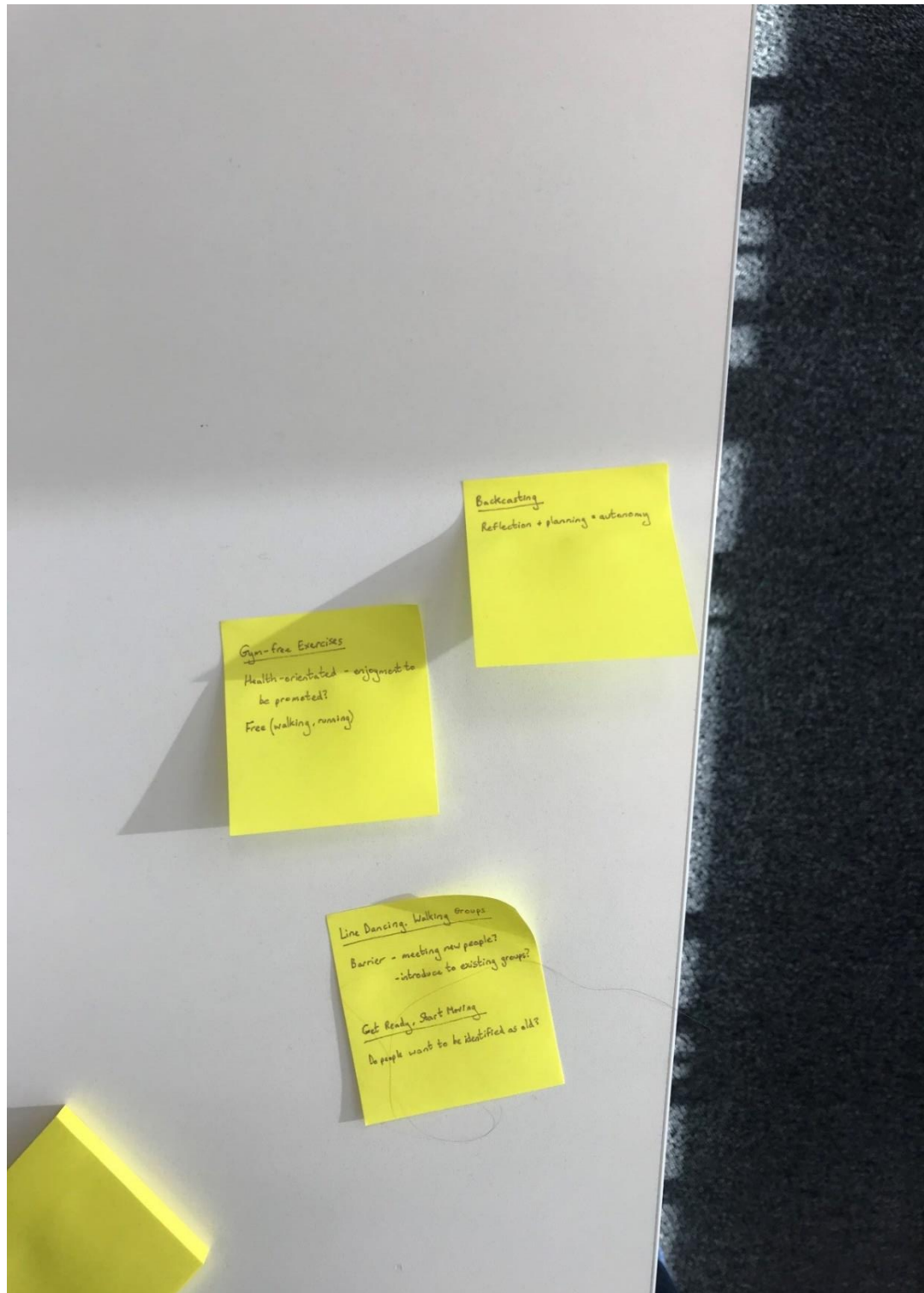
- At risk of social isolation/loneliness
- With health issues
- Lacking Internet literacy/access to Internet
- Lacking finances
- Other groups?

Isr connect them with anything social first

Ditto.







6.Z Interview Guide for the Pension Engagement Consultant

1. Laura's job

What do you do for work? What kind of support do you offer? What kind of organisations do you work with?

2. Perceptions and experiences of her clients

How old are your clients? Are most of them close to retirement? Are people usually open to the idea of retirement planning? Do people generally like thinking about financial planning for retirement? Do they plan much in your opinion? What does this planning involve? Do your sessions encourage them to plan more? Have any of them showed any interest in health, social, or lifestyle planning?

3. Bridge to health and social activities planning.

Do you think people would be interested in receiving information about health, lifestyle, and social planning in addition to financial side?

4. Who should do it and to integrate health/social planning?

During the workshops some stakeholders suggested that it would be beneficial for employers encourage their workers to think about health planning after retirement as well. In your opinion, do consultants like you would be a good choice to promote it? Maybe any other ideas who else could possibly do it? Can you think about the ways how to integrate health/social planning element in the sessions like yours?

5. Encouraging people to think about health, social planning, and physical activity.

In your opinion, what might work in encouraging people to plan their health and social activities in retirement?

Some experts suggested to use financial benefits as a motivating factor to make healthy choices, for example cycling to work is cheaper than paying for petrol and parking space or getting incentives for walking a certain number of steps. Do you think promoting such idea would work for your clients? Any ideas how else to promote physical activity?

6. Backcasting.

What do you think about the 'Backcasting' idea? Do you think it would make people start thinking about physical activity during the retirement transition? In your opinion, how well would those approaching retirement receive it? Would it be possible to integrate the 'Backcasting' during your sessions and how?

6.AA 'Backcasting' Task Poster modified After the Workshops

Backcasting

Backcasting is an idea for planning that starts with imagining a desirable future self first and then moving backwards to plan the steps how to reach that future image.

How it works

- 1) Create an *image of your ideal future self* – what you hope to be like in the next 15-20 years.
- 2) Consider the *steps needed to become that ideal future self*. This will involve developing a *detailed plan* how you would achieve that image step-by-step moving backwards.



Step 1- Future me

I hope to be independent. I hope that I can still drive and attend my clubs. I hope that I play a role in the lives of my children and grand children.

Step 2- Steps needed to become ideal future me








What will I do?
I'll need to stay active- lots of physical activities for my health. Lots of social interaction to keep the brain active.

Who will I do it with?
With my current friends? Will I make new friends?
With my family? With my partner/spouse?

Where will I go?
Activities at home? Make use of the local environment? Local community centres?

When will I do the activities? What will I start?
When I retire? Before I leave work so it's not a big new change? What days will I have free?

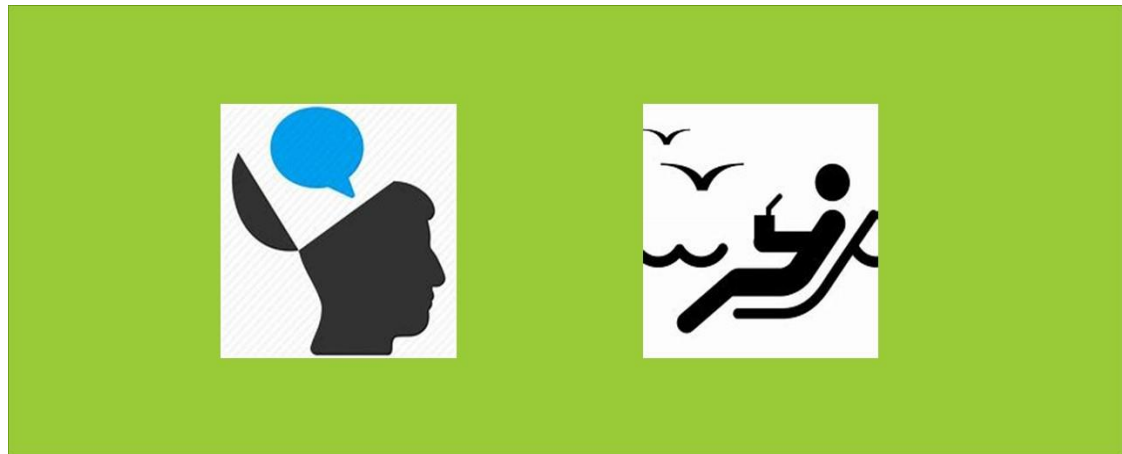
Where do I start?

How do I find out the information that I need to start planning?



6.AB 'Backcasting' Slides for Women

Slide 1



Northumbria
University
NEWCASTLE

RETIREMENT PLANNING

Anastasiia Fadeeva



Slide 2

DEVELOPMENT OF THE TASK

Discussions with:

- ☐ experts in retirement
- ☐ experts in behaviour change
- ☐ organisers of exercising groups for 50+
- ☐ members of local council

What's its purpose?

Develop ideas how to promote enjoyable and active retirement

Why might it work?

- Thinking about future; Focusing on positive images;
- Planning your own goals and actions; Taking control over your life;
- Writing the plan down

Backcasting

Backcasting is an idea for planning that starts with imagining a desirable future self first and then moving backwards to plan the steps how to reach that future image.

How it works

- 1) Create an *image of your ideal future self* – what you hope to be like in the next 15-20 years.
- 2) Consider the *steps needed to become that ideal future self*. This will involve developing a *detailed plan* how you would achieve that image step-by-step moving backwards.

Step 1- Future me

I hope to be independent. I hope that I can still drive and attend my clubs. I hope that I play a role in the lives of my children and grand children.

Step 2- Steps needed to become ideal future me

What will I do?
I'll need to stay active- lots of physical activities for my health. Lots of social interaction to keep the brain active.

Who will I do it with?
With my current friends? Will I make new friends? With my family? With my partner/spouse?

Where will I go?
Activities at home? Make use of the local environment? Local community centres?

When will I do the activities? What will I start?
When I retire? Before I leave work so it's not a big new change? What days will I have free?

Where do I start?
How do I find out the information that I need to start planning?

Slide 3

DEVELOPMENT OF THE TASK

Discussions with:

- ☐ experts in retirement
- ☐ experts in behaviour change
- ☐ organisers of exercising groups for 50+
- ☐ members of local council

What's its purpose?

Develop ideas how to promote enjoyable and active retirement

Why might it work?

- Thinking about future; Focusing on positive images;
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- Writing the plan down

Backcasting

Backcasting is an idea for planning that starts with imagining a desirable future self first and then moving backwards to plan the steps how to reach that future image.

How it works

- 1) Create an *image of your ideal future self* – what you hope to be like in the next 15-20 years.
- 2) Consider the *steps needed to become that ideal future self*. This will involve developing a *detailed plan* how you would achieve that image step-by-step moving backwards.



Step 1- Future me
I hope to be independent. I hope that I can still drive and attend my clubs. I hope that I play a role in the lives of my children and grandchildren.

Step 2- Steps needed to become ideal future me








What will I do?
I'll need to stay active- lots of physical activities for my health. Lots of social interaction to keep the brain active.

Who will I do it with?
With my current friends? Will I make new friends? With my family? With my partner/spouse?


Where will I go?
Activities at home? Make use of the local environment? Local community centres?

When will I do the activities? What will I start?
When I retire? Before I leave work so it's not a big new change? What days will I have free?

Where do I start?
How do I find out the information that I need to start planning?

Slide 4

HOW CAN YOU HELP?



☐ Watch the following presentation about the retirement planning task.

☐ Think about:

Does the task make sense?

Would you do it?

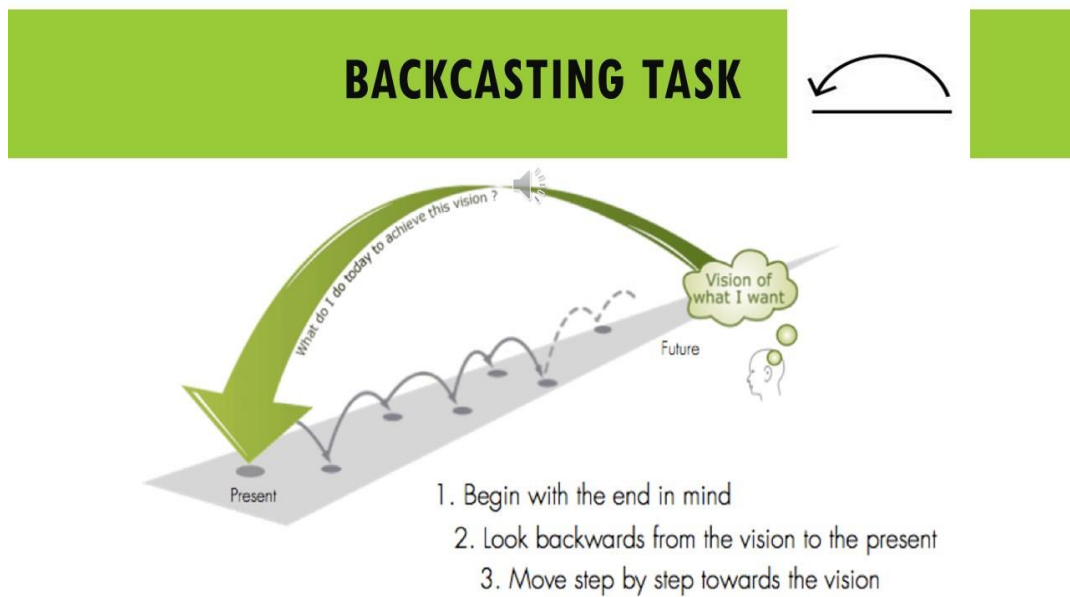
Was it clear what you needed to do?

Would it help you?

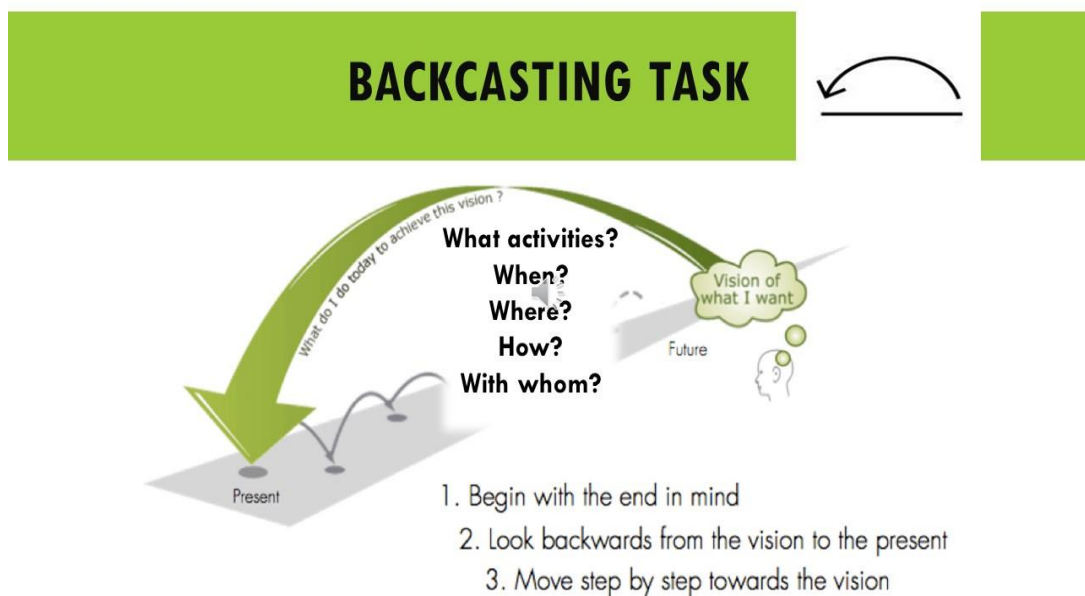
Would it be interesting?

☐ At the end of this presentation we will ask you to complete a short survey about the task.

Slide 5



Slide 6




Slide 7

BACKCASTING TASK

1) Create an **image of your ideal future self** – what you **hope** to be like in the next 15-20 years.


2) Consider the **steps needed to become that ideal future self**.





This will involve developing a **detailed plan** how you would achieve that image step-by-step moving backwards.



Step 1 - Future me
I hope to be independent. I hope that I can still drive and attend my clubs. I hope that I play a role in the lives of my children and grand children.

Step 2- Steps needed to become ideal future me




What will I do?
I'll need to stay active- lots of physical activities for my health. Lots of social interaction to keep the brain active.

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When will I do the activities? What will I start?
When I retire? Before I leave work so it's not a big new change? What days will I have free?

Where do I start?
How do I find out the information that I need to start planning?



Slide 8

BACKCASTING TASK



What do I do today to achieve this vision?

Present

ME IN ONE YEAR TIME

ME IN FIVE YEARS TIME

Vision of what I want



HOPED FOR FUTURE ME

APPENDICES

Slide 9

YOUR TURN



For the next 10-minutes I would like you to pause the video and try the Backcasting task. Fill out the table provided in as much detail as possible.

Describe your hoped for future self	What will you do?	Who will you do it with?	Where will you go?	When will you do it? When will you start?	Where will I start? (find information)

Slide 10

LET US KNOW WHAT YOU THINK



It is important than we *continue to develop this idea* to make it as good, fun and usable as possible.

Please let us know *what you think* about the task. That might include *aspects that you liked* and *parts that could be improved*.

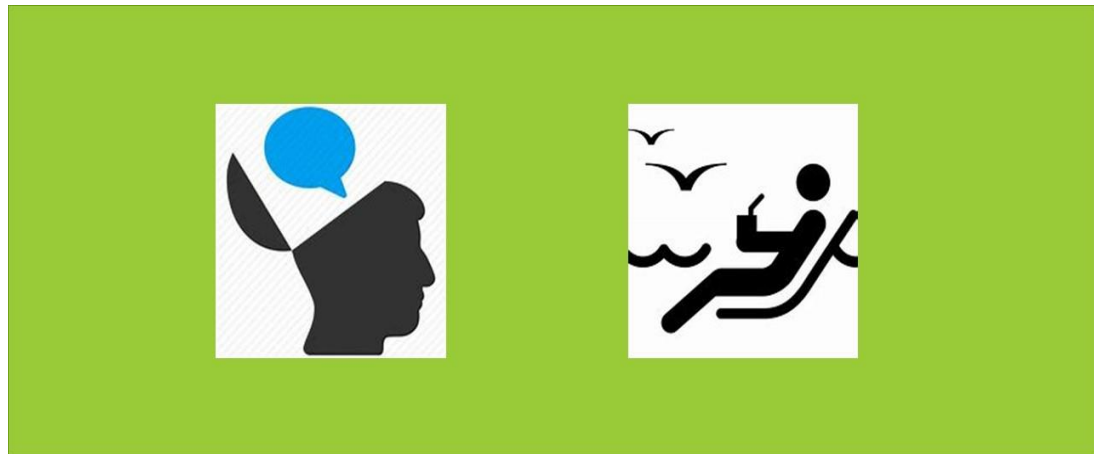
Let us know *how you felt* whilst completing it.

- Did it make you feel anxious about the future?
- Did you feel more confident about your retirement?



6.AC 'Backcasting' Slides for Men

Slide 1



Northumbria
University
NEWCASTLE

RETIREMENT PLANNING

Anastasiia Fadeeva



Slide 2

DEVELOPMENT OF THE TASK

Discussions with:

- ☐ experts in retirement
- ☐ experts in behaviour change
- ☐ organisers of exercising groups for 50+
- ☐ members of local council

What's its purpose?

Develop ideas how to promote enjoyable and active retirement

Why might it work?

- Thinking about future; Focusing on positive images;
- Planning your own goals and actions; Taking control over your life;
- Writing the plan down

Backcasting

Backcasting is an idea for planning that starts with imagining a desirable future self first and then moving backwards to plan the steps how to reach that future image.

How it works

- 1) Create an image of your ideal future self – what you hope to be like in the next 15-20 years.
- 2) Consider the steps needed to become that ideal future self. This will involve developing a detailed plan how you would achieve that image step-by-step moving backwards.



Step 1- Future me
I hope to be independent. I hope that I can still drive and attend my clubs. I hope that I play a role in the lives of my children and grand children.

Step 2- Steps needed to become ideal future me

What will I do?
I'll need to stay active- lots of physical activities for my health. Lots of social interaction to keep the brain active.

Who will I do it with?
With my current friends? Will I make new friends? With my family? With my partner/spouse?

Where will I go?
Activities at home? Make use of the local environment? Local community centres?

When will I do the activities? What will I start?
When I retire? Before I leave work so it's not a big new change? What days will I have free?






Where do I start?
How do I find out the information that I need to start planning?



Slide 3

DEVELOPMENT OF THE TASK

Discussions with:

- ☐ experts in retirement
- ☐ experts in behaviour change
- ☐ organisers of exercising groups for 50+
- ☐ members of local council

What's its purpose?

Develop ideas how to promote enjoyable and active retirement

Why might it work?

- Thinking about future; Focusing on positive images;
- Planning your own goals and actions; Taking control over your life;
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Backcasting

Backcasting is an idea for planning that starts with imagining a desirable future self first and then moving backwards to plan the steps how to reach that future image.

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Step 1- Future me
I hope to be independent. I hope that I can still drive and attend my clubs. I hope that I play a role in the lives of my children and grandchildren.

Step 2- Steps needed to become ideal future me

What will I do?
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Who will I do it with?
With my current friends? Will I make new friends? With my family? With my partner/spouse?

Where will I go?
Activities at home? Make use of the local environment? Local community centres?

When will I do the activities? What will I start?
When I retire? Before I leave work so it's not a big new change? What days will I have free?

Where do I start?
How do I find out the information that I need to start planning?

Slide 4

HOW CAN YOU HELP?

- ☐ Watch the following presentation about the retirement planning task.
- ☐ Think about:

Does the task make sense?

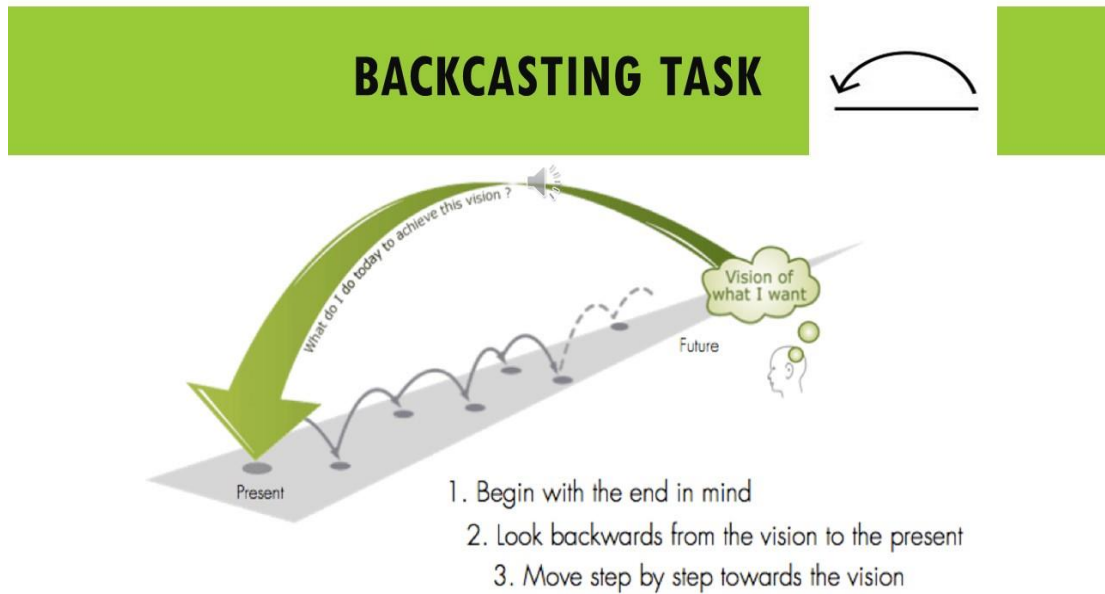
Was it clear what you needed to do?

Would you do it?

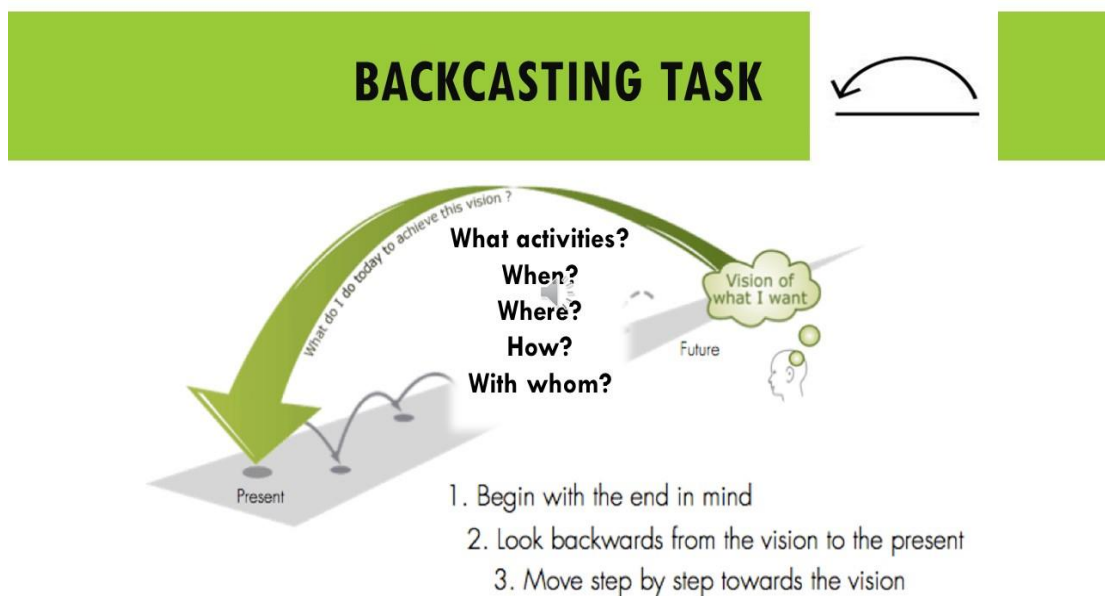
Would it help you?

Would it be interesting?
- ☐ At the end of this presentation we will ask you to complete a short survey about the task.

Slide 5



Slide 6




Slide 7

BACKCASTING TASK

1) Create an *image of your ideal future self* – what you *hope* to be like in the next 15-20 years.


2) Consider the *steps needed to become that ideal future self*.

This will involve developing a **detailed plan** how you would achieve that image step-by-step moving backwards.



Step 1- Future me
I hope to be independent. I hope that I can still drive and attend my clubs. I hope that I play a role in the lives of my children and grand children.

Step 2- Steps needed to become ideal future me




What will I do?
I'll need to stay active- lots of physical activities for my health. Lots of social interaction to keep the brain active.

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Where do I start?
How do I find out the information that I need to start planning?



What will I do?
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With my current friends? Will I make new friends? With my family? With my partner/spouse? On my own?

Where will I go?
Activities at home? Make use of the local environment? Local community centres?

When will I do the activities? What will I start?
When I retire? Before I leave work so it's not a big new change? What days will I have free?

Slide 8



Slide 9



For the next 10-minutes I would like you to pause the video and try the Backcasting task. Fill out the table provided in as much detail as possible.

Describe your hoped for future self	What will you do?	Who will you do it with?	Where will you go?	When will you do it? When will you start?	Where will I start? (find information)

Slide 10



It is important than we *continue to develop this idea* to make it as good, fun and usable as possible.

Please let us know *what you think* about the task. That might include *aspects that you liked* and *parts that could be improved*.

Let us know *how you felt* whilst completing it.

- Did it make you feel anxious about the future?
- Did you feel more confident about your retirement?



6.AD Participant Information Sheet²¹

Promoting active and healthy retirement through a planning task

Before you decide to take part in this research study, it is important for you to read this leaflet so you understand why this study is being carried out and what it will involve.

Reading this leaflet, discussing it with others, and asking questions you might have will help you decide if you would like to take part.

THE STUDY

What is the purpose of the study?

The aim of the study is to provide your opinions on a **retirement planning task** that we hope will facilitate a **more happy and healthy retirement experience**.

What will I have to do if I take part?

You will be asked to watch a **short video (8-minutes)** that describes a retirement planning, as part of the video you will be asked to **trial the planning task (10-minutes)**. After watching the video, you will be asked to give feedback on the task via an **online survey (approximately 10- minutes)**. The survey questions will ask about your experience and thoughts about the usefulness of the planning task.

After you have completed the study, the researcher will give you a debrief sheet explaining the nature of the research, how you can find out about the results, and how you can withdraw your data if you wish.

Why have I been invited?

Because you have either retired within the last two years or currently working and aged 50+.

Do I have to take part?

You are under **no obligation** to take part and you will not experience any loss of benefit or penalty if you choose not to participate. This information sheet is provided to you to help you make that decision. If you do decide to take part, remember that you can stop being involved in the study at any time without giving a reason.

What are the possible benefits and disadvantages of taking part?

²¹ Survey and 'Backcasting' task – Chapter 5

By taking part in this study, you will contribute to the development of an intervention which hopes to improve the retirement experience through prior planning. It is not anticipated this study will cause any psychological or physical discomfort.

THE DATA AND MY ANONIMITY

Will my taking part in this study be kept confidential and anonymous?

Your name will not appear with any of the data we collect; you will be assigned a unique participant code that will be used for identification purposes throughout the study. If you take part in the phone interview, your name will not be used in any reports or documents resulting from this study. The consent form you have signed will be stored separately from your other data. Only the research team will have access to any identifiable information. All recordings will be deleted once transcribed. **The data collected from you in this study will be confidential.**

If you decide to take part, you are still free to withdraw from the study at any time without reason.

How will my data be stored, and how long will it be stored for?

All the notes, materials from the workshop and your consent forms will be stored in a **locked filing cabinet**. All electronic data will be stored on a **password-protected computer**. All data will be stored for three years in accordance with the General Data Protection Regulation (GDPR), after which it will be destroyed.

What will happen to the results of the study and could personal data collected be used in future research?

The data collected in this study will be used for a **Postgraduate Thesis**. The general findings might be reported in a **scientific journal or presented at a research conference**, however the data will be **anonymised** and you or the data you have provided will not be personally identifiable, unless we have asked for your specific consent for this beforehand. The findings might also be shared with other organisations/institutions that have been involved with the study. We can provide you with a summary of the findings from the study if you contact the researcher at the email address or phone number listed below.

What categories of personal data will be collected and processed in this study?

For the purposes of the study, we will collect and process the information about your age, gender, occupation, and how long you have been retired if applicable.

What is the legal basis for processing personal data?

Processing the personal data required for this study is necessary for scientific and historical research purposes.

Who are the recipients or categories of recipients of personal data, if any?

The research team at **Northumbria University** and one external member of the team from **Liverpool John Moores University** will use and process personal data collected in the study.

Who is organising and funding the study?

Northumbria University.

Who has reviewed this study?

The Faculty of Health and Life Sciences **Research Ethics Committee** at Northumbria University have reviewed the study in order to safeguard your interests, and have granted approval to conduct the study.

What are my rights as a participant in this study?

A right of access to a copy of the information comprised in their personal data (to do so individuals should submit a Subject Access Request); a right in certain circumstances to have inaccurate personal data rectified; and a right to object to decisions being taken by automated means. If you are dissatisfied with the University's processing of personal data, you have the right to complain to the Information Commissioner's Office.

Contact

For further information, to take part in the study, or to remove yourself from the data set please **contact the primary investigator, Anastasiia Fadeeva** at anastasiia.fadeeva@northumbria.ac.uk; +44 01912437018.

Primary Supervisor: Katherine Baker; Katherine.baker@northumbria.ac.uk.

Data Protection Officer: Duncan James; dp.officer@northumbria.ac.uk.

Many thanks for your time.

6.AE Informed Consent²²



Informed Consent

Project Title: Promoting active and healthy retirement through a planning task

Principal Investigator: Anastasiia Fadeeva

Thank you for considering taking part in this research. If you have any questions please ask members of the research team before you decide whether to take part. You can keep an electronic copy of this Consent Form to refer to at any time. Please confirm:

I have carefully read and understood the Participant Information Sheet. ☐

I have had an opportunity to ask questions and discuss this study and I have received satisfactory answers. ☐

I understand I am free to withdraw from the study at any time, without having to give a reason for withdrawing, and without prejudice. ☐

I agree to take part in this study. ☐

I also consent to the retention of this data under the condition that any subsequent use also be restricted to research projects that have gained ethical approval from Northumbria University. ☐


Signature of participant..... **Date**.....
(NAME IN BLOCK LETTERS).....

²² Survey and 'Backcasting' task – Chapter 5

APPENDICES

Signature of researcher..... Date.....
(NAME IN BLOCK LETTERS).....

6.AF Backcasting Survey


Online surveys

Backcasting survey

Showing 0 of 0 responses

Showing **all** responses

Showing **all** questions

1 Thank you for considering taking part in this study. If you have any questions please ask members of the research team before you decide whether to take part. Please confirm:

I have carefully read and understood the Participant Information Sheet.	0
I have had an opportunity to ask questions and discuss this study and I have received satisfactory answers.	0
I understand I am free to withdraw from the study at any time, without having to give a reason for withdrawing, and without prejudice.	0
I agree to take part in this study.	0
I also consent to the retention of this data under the condition that any subsequent use also be restricted to research projects that have gained ethical approval from Northumbria University.	0

Multi answer: Percentage of respondents who selected each answer option (e.g. 100% would represent that all this question's respondents chose that option)

2 What is your sex?

1 / 7

Female		0
Male		0
Other (please specify)		0

2.a If you selected Other, please specify:

No responses

3 How old are you?

No responses

4 Which of the following statements best describes your current occupational status. Please select one.

Retired		0
In full-time or part time employment		0
Other		0

4.a If you selected Other, please specify:

No responses

4.b If you selected 'retired' indicate how long you have been retired for

No responses

5 Please indicate your current or more recent job title

No responses

6 What is the highest level of education you have completed?

Higher Education & professional/vocational equivalents	0
A levels, vocational level 3 and equivalents	0
GCSE/O Level grade A*-C, vocational level 2 and equivalents	0
Qualifications at level 1 and below	0
Other qualifications: level unknown	0
No qualifications	0
Don't know	0

7 How did you feel while completing the Backasting task?

No responses

8 On a scale 1 (Not at all) to 5 (A lot), to what extent do you think the Backcasting task could make people feel more anxious about retirement?

1 (Not at all)	0
2	0
3	0
4	0
5 (A lot)	0

9 On a scale 1 (Not at all) to 5 (A lot), to what extent do you think the Backcasting task could make people feel more confident about retirement?

1 (Not at all)	0
2	0
3	0
4	0
5 (A lot)	0

- 10** On a scale 1 (Not at all) to 5 (A lot), to what extent do you think that the Backcasting task, that is a starting plan for your future/retirement, would positively contribute to a more enjoyable retirement experience?

1 (Not at all)		0
2		0
3		0
4		0
5 (A lot)		0

- 11** Were the instructions about how to complete the task clear and understandable?

Yes		0
No		0

- 11.a** Any comments (optional):

No responses

- 12** Were there any parts of the task which were not clear?

Yes		0
No		0

- 12.a** If yes, what part(s) and why?

No responses

- 13** Were there any parts of the task that you did not find useful?

Yes		0
No		0

13.a If yes, what part(s) and why?

No responses

14 Were there any parts of the task that you found particularly useful?

Yes		0
No		0

14.a If yes, what part(s) and why?

No responses

15 Are you currently aware of any activities/facilities/groups/clubs in your local area that might support you achieving your desired future self?

Yes		0
No		0

15.a If yes, what activities/facilities/groups/clubs are you aware of and how did you find out about them?

No responses

16 If you are not aware of any suitable activities/facilities/groups/clubs, do you know how/where you could find this information?

Yes		0
No		0

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16.a If yes, how/where would you go to find this information?

No responses

17 Did you enjoy completing the task?

Yes	0
No	0

17.a Why (optional)?

No responses

18 Did completing the task make you think more about your retirement?

Yes	0
No	0

18.a Any comments (optional):

No responses

19 Is this task something you would do to help plan for your retirement?

Yes	0
No	0

19.a Any comments (optional):

No responses

20 What benefits do you think you might get from planning for your retirement in this way?

No responses

21 Did you/are you currently planning for your retirement?

Yes	0
No	0

21.a If yes, what aspects of retirement did/are you planning for?

No responses

6.AG Email to Survey Participants

Thank you very much. Before taking part, please see the instructions on what you will need to do:

- 1) To participate in the study, you first will be asked to watch a short video describing a retirement planning task. The video is 8- minutes in length- you can pause the video at any stage. The link for the video can be found here: <https://vimeo.com/401635405>
- 2) After watching the video, you will be asked to complete a short survey (10-minutes). The survey will ask some general demographic questions (e.g., age, gender, employment status) and your opinion about the planning task. The link for the survey is here: <https://northumbria.onlinesurveys.ac.uk/backcasting>
- 3) While watching the video you will be asked to try the planning task. For your convenience, please feel free to use the attached table for the task (Backcasting Task Table). We would be grateful if you could send the completed table to us (anastasiia.fadeeva@northumbria.ac.uk), so we could get a better understanding of how people completed the task and how people plan for their retirement. Feel free to share as much information as you want to. You don't need to put your name on it- this information will remain anonymous.

Please follow the instructions and if you have any questions or concerns, let me know.

Kind regards,
Anastasia

6.AH 'Backcasting' Task Table

Describe your hoped for future self	
What will you do?	
Who will you do it with?	
Where will you go?	
When will you do it? When will you start?	
Where will I start? (find information)	

6.AI Participant Debrief²³

Participant Debrief

Principal Investigator: Anastasiia Fadeeva

Principal Investigator contact details:

anastasiia.fadeeva@northumbria.ac.uk

Principal Supervisor: Dr Katherine Baker

What is the purpose of the study?

Retirement transition presents an opportunity for health promotion activities as it is associated with increase in spare time, need to restructure activities of daily living, changes in identity, and individuals' own wishes and plans to improve health behaviours. Implementing health and well-being promoting activities during the early stages of retirement can improve the experiences of retirement and later life.

Engaging with various social and physical activities after retirement can prevent or mitigate negative consequences associated with ageing and retirement. The benefits include improving physical capacities, preventing disease, enhancing mental health, increasing self-esteem and independence. Furthermore, planning for and engaging with activities might benefit individuals going through the retirement transition by facilitating identity reconstruction, increasing social connections, and fulfilling time with activities.

One way to develop a sustainable and feasible lifestyle intervention is to involve a range of experts working in both academia and public health sectors, as well as the target population. **Stakeholders' involvement** has a potential to address the common problem – a gap between research and practice by ensuring that the intervention is relevant and useful for groups who have direct interest in it – future users and practitioners. As such, the aim of the present study is to collaboratively develop the ideas on how to promote healthy and active retirement with **the experts** working in the fields of healthy ageing, retirement, or behaviour change, AND the **target population** – people undergoing through the retirement transition.

How will I find out about the results?

²³ Survey and 'Backcasting' task – Chapter 5

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You will be provided with **a summary of the findings** from the study if you **contact the researcher** at the email address or phone number listed below.

What will happen to the information I have provided?

You will be assigned a unique participant code that will be used for identification purposes throughout the study. Your personal details will not be associated with your data. Only the research team will have an access to any identifiable information. Paper records will be stored in a locked filing cabinet and electronic information will be stored on a password protected computer. Any personal details will be kept separate from other data and will be treated in accordance with the Data Protection Act. **The data collected from you in this study will be confidential.** If you take part in the telephone interview, all audio recordings will be permanently destroyed once transcribed.

How will the results be disseminated?

The data collected in this study will be used for a Postgraduate Thesis. The general findings might be reported in a **scientific journal or presented at a research conference**, however the data will be **anonymised** and you or the data you have provided will not be personally identifiable, unless we have asked for your specific consent for this beforehand. The findings might also be shared with other organisations/institutions that have been involved with the study.

Have I been deceived in any way during the project?

No

If I change my mind and wish to withdraw the information I have provided, how do I do this?

If you wish to withdraw, please contact Anastasiia Fadeeva anastasiia.fadeeva@northumbria.ac.uk; +44 01912437018 or alternatively Dr Katherine Baker katherine.baker@northumbria.ac.uk.

If you have any concern or worries concerning the way in which this research has been conducted, or if you have requested, but did not receive feedback from the principal investigator concerning the general outcomes of the study after the study has concluded, then please contact Chair of the

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Faculty of Health and Life Sciences Ethics Committee, Northumberland
Building, Northumbria University, Newcastle upon Tyne, NE1 8ST.

Glossary

A random intercepts model is a model in which intercepts are allowed to vary, and therefore, the scores on the dependent variable for each individual observation are predicted by the intercept that varies across groups and is different from a grand mean (Cohen, Cohen, P., West, S. G., & Aiken, 2003).

A random slopes model is a model in which slopes are allowed to vary from the mean trajectory, and therefore, the slopes are different across groups. This model assumes that intercepts are fixed (the same across different contexts) (Cohen et al., 2003).

A random intercepts and slopes model is a model in which both intercepts and slopes are allowed to vary across groups (Cohen et al., 2003).

Deviance is a measure of goodness of fit of a multilevel model (i.e., describing how well the model fits a set of observations) (McCullagh & Nelder, 1989). The *Deviance Statistic* is used to test the hypothesis that adding additional predictors to the model do not improve the fit of the model. The null hypothesis implies that the coefficients of the additional predictors are equal to zero. Smaller deviance indicates a better fit of the model (Singer, Willett, & Willett, 2003).

Intra-class correlations (ICC) coefficient is a proportion of the total variance explained by the grouping structure (i.e. level 2). A high ICC close to 1 indicates high similarity between values from the same group. A low ICC close to zero means that values from the same group are not similar (Gelman & Hill, 2007).

Maximum likelihood estimation is a method of estimating the model parameters that have most likely produced the observed data, (i.e., the covariances and the variances among

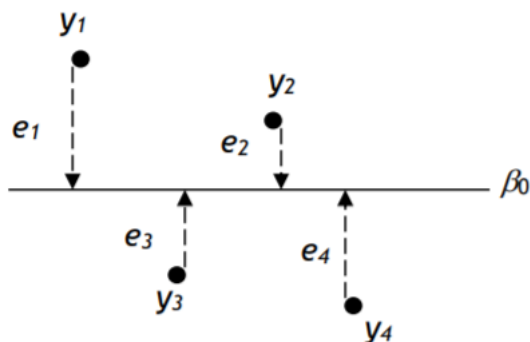
the variables in the model) by maximising a likelihood function (Hox & Roberts, 2011). In statistics, the likelihood function measures the goodness of fit of a statistical model to a sample of data for given values of the unknown parameters (Myung, 2003). In multilevel modelling for level-2 variance component estimates, full maximum likelihood (FML) or restricted maximum likelihood (REML) estimations can be used. Both methods produce similar estimates with large numbers of clusters at the level-2, but diverge when the number of clusters is small, with REML providing less biased estimates of variance component (Hoyle & Gottfredson, 2015).

Residual variance

The residual for each observation is the difference between the value of the outcome variable predicted by the equation and the actual value of the outcome variable (Steel, 2008). Graphically, the residual is the distance between the data point and the regression line (Figure 1).

Figure 1.

Residuals for four data points in a single-level model



Note. y_{1-4} outcome variables for the measurement occasions 1-4, e_{1-4} residuals, β_0 regression line predicted by the equation. Reprinted from *Module 5: Introduction to*

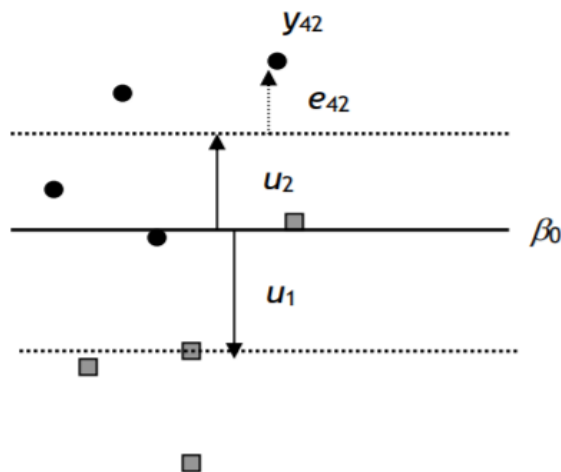
Glossary

Multilevel Modelling Concepts, (p. 6), by F. Steel, 2008, Centre for Multilevel Modelling.

Multilevel models allows for residual components at each level in the hierarchy. Graphically, level-2 residual is the distance from the overall regression line to the line for the group (Figure 2).

Figure 2

Individual and group residuals in a two-level model



Note. y_{42} outcome variable, e_{42} level-1 residual, u_1 and u_2 are level- 2 residuals, β_0 regression line predicted by the equation. Reprinted from *Module 5: Introduction to Multilevel Modelling Concepts*, (p. 7), by F. Steel, 2008, Centre for Multilevel Modelling.

For multilevel modelling the residual variance is partitioned into to two components: a between-groups (subjects, individuals) component and a within-group (or subject, individual) component. Residual variance (between) indicates the proportion of total variance in the outcome variable that is due to differences between groups (subjects,

Glossary

individuals), whereas residual variance (within) presents the proportion of total variance in the outcome variable that is due to differences within groups (subjects, individuals).

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